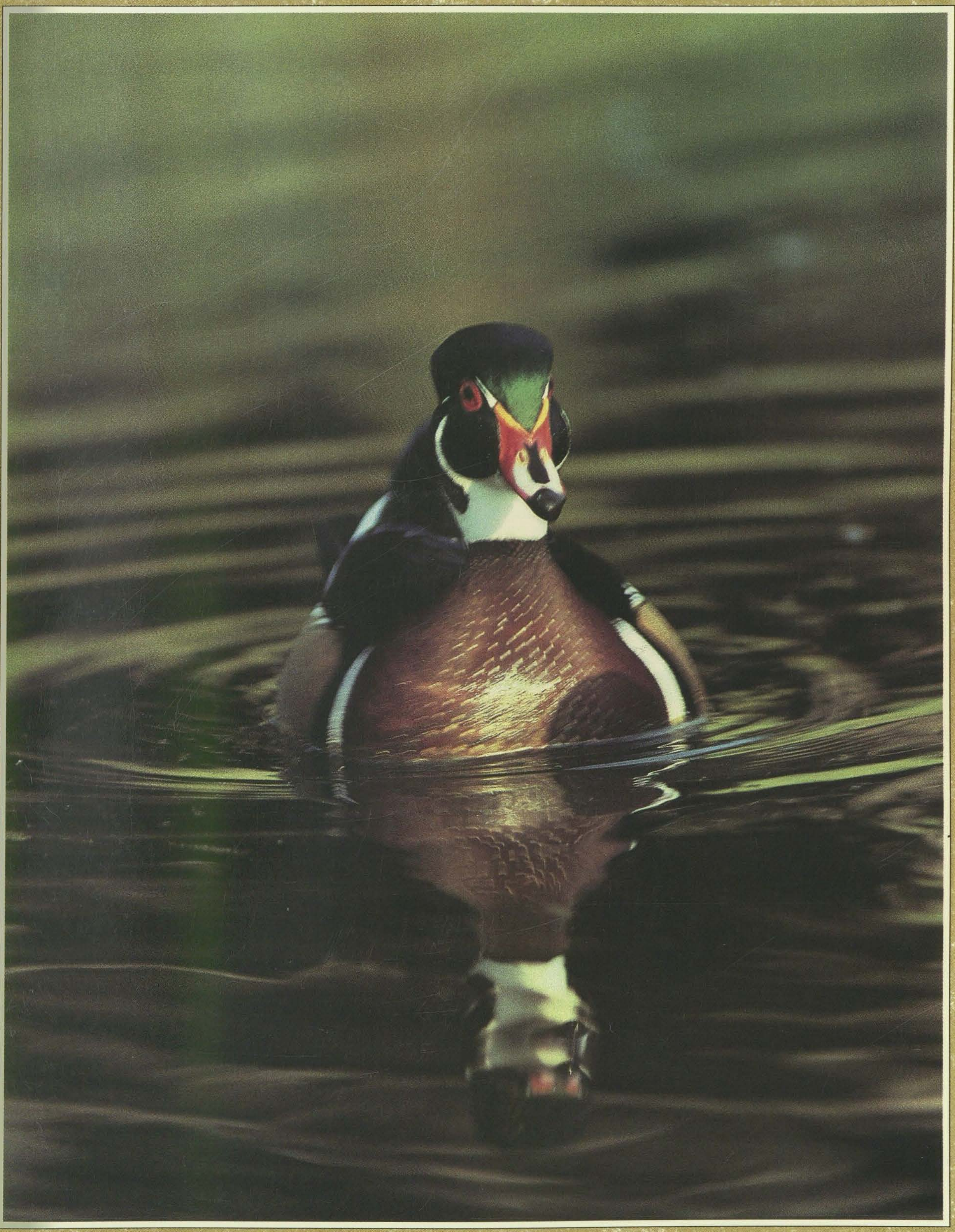
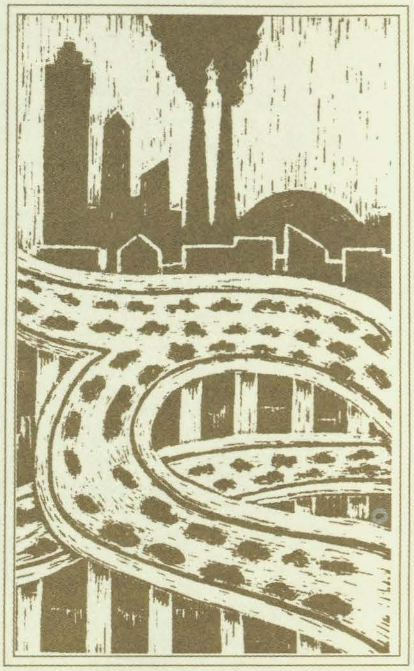
FLORIDA WILDLIFE®

Volume 46, Number 6 November-December 1992



Raise Your Wildlife I.Q.



CLARK FRAZIER

Approximately 1,000 people move to Florida every day. Each household requires a place to live, utilities, roads and other services. Human habitat is replacing wildlife habitat at an alarming rate. Loss of habitat, the wild land where animals live, is the biggest reason for the reduction in wildlife populations. Since 1950, Florida has lost one-half of its wetlands, one-quarter of its forests and most of its tropical hardwood hammocks, scrub and coastal habitat.

If people have the facts and understand the implications of their activities, they can make conservation-minded choices. Here are some things you can do to help wildlife and raise your wildife I.Q.

- **Support government action designed to protect vanishing species and the habitats on which they depend. Support elected officials who champion environmental issues.**

- **Follow your local newspapers for information about current issues and decisions affecting native wildlife. Learn all you can about Florida wildlife from periodicals published by state, local and national groups that work on habitat issues. Give FLORIDA WILDLIFE subscriptions to friends and co-workers.**

- **Join a conservation group. Check with local parks, wildlife rehabilitators, nature centers, private non-profit conservation groups or state resource agencies to volunteer your time to help wildlife.**

- **Report wildlife law violators to the nearest Florida Game and Fresh Water Fish Commission regional office.**

- **Buy a Florida panther or manatee license plate for your car. A portion of your fee will go to the Save Our State Environmental Trust Fund, Florida Panther Research and Management Trust Fund or the Save the Manatee Trust Fund.**

- **Add a dollar for wildlife when you renew your auto tag. Inform the clerk that you are making a contribution for nongame wildlife. Your contribution will benefit songbirds, wading birds, small mammals, reptiles, amphibians and many others.**

WHAT HAVE YOU DONE FOR WILDLIFE LATELY?

To learn more about what you can do to help Florida's wildlife, contact the Bureau of Nongame and Endangered Species, Florida Game and Fresh Water Fish Commission.

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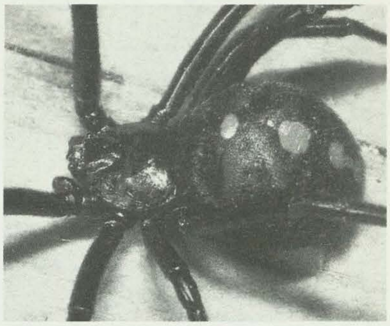


You've probably heard of black widow spiders, but did you know that three other types of widow spiders can be found in Florida as well? Read more, beginning on page 9.

Contents

2 **Bringing Wildlife to School**, By Lenela Glass-Godwin
5 **Natural Holiday Crafts**, By Susan Cerulean and Ann Morrow
7 **Hunting in "Hell"**, By David A. Avant III
9 **Four Florida Widows**, By James C. Cokendolpher and Dr. G.B. Edwards
13 **Target: Lake George**, By Stew Hudson
16 **A Camelot For Two**, By Elizabeth Cutlip
20 **Florida's Freshwater Fishes — Panfish**, By Mark A. Trainor
26 **Photo Contest Winners: Other Wild Animals**
30 **Photo Contest Winners: Florida's Natural Environment**
34 **A Free Art Print Offer to Subscribers**
35 **Wood Duck Nest Box Program**, By Diane Roth Eggeman
37 **Wood Duck Fans Flock to the Rescue**, By Andrea H. Blount
38 **How to Build a Wood Duck Box**
39 **Two Good Bets For a Trophy Buck**, By Lt. Stan Kirkland

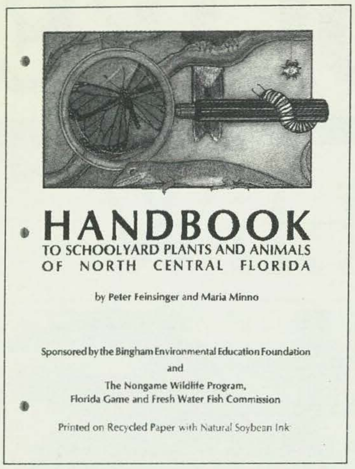
Departments

15 **Delicate Balance: Florida Mastiff Bat** By Mark Robson and Susan Cerulean
42 **Outdoor Library**
43 **It's The Law**, By Inspector Kyle W. Hill
44 **Hunter Education**, By Captain Ed Tyer
46 **Conservation Update**

Covers

The wood duck on our front cover appears to be headed straight for the camera. William Weber captured this unusual view. For the back cover, Rob Curtis photographed a screech owl in its nest cavity.

Printed on recycled paper.



HANDBOOK
TO SCHOOLYARD PLANTS AND ANIMALS
OF NORTH CENTRAL FLORIDA

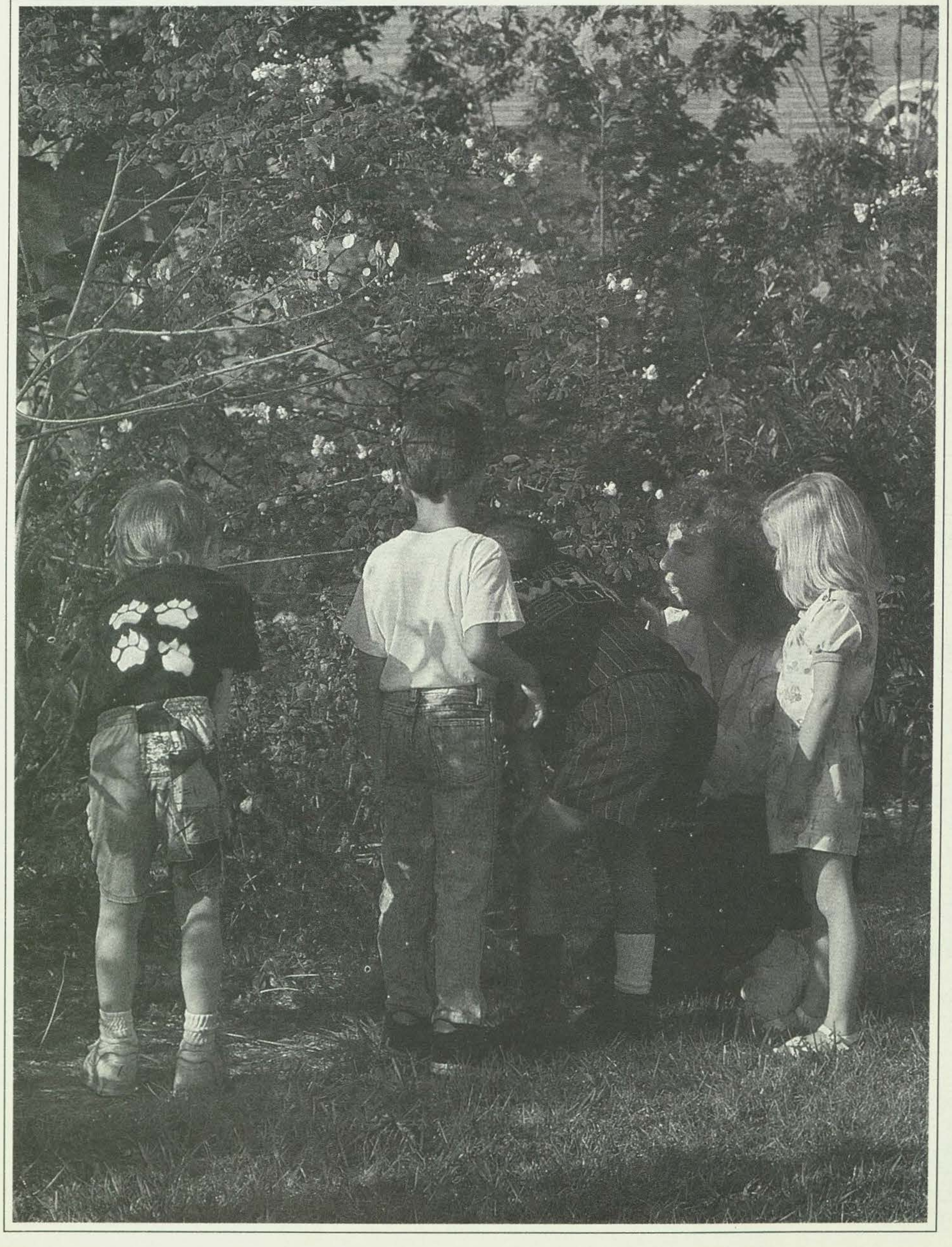
by Peter Feinsinger and Maria Minno

Sponsored by the Bingham Environmental Education Foundation
and
The Nongame Wildlife Program,
Florida Game and Fresh Water Fish Commission

Printed on Recycled Paper with Natural Soybean Ink

Bringing Wildlife to School

By Lenela Glass-Godwin
Photographs by James C. Godwin



On a sunny November morning Joyce Hortman leads her kindergarten class onto the playground at Ft. Myers' Orange River Elementary School. The serpentine line of children resembles the wavering tail of a kite in the wind. Their faces glow, and they can hardly contain their enthusiasm upon being outdoors. But these children did not go outside to play. Instead, they are visiting their butterfly garden, a miniature wildlife habitat that serves as an outdoor classroom.

This school's butterfly garden is only one example of a number of schoolyard habitats that have popped up on Lee County campuses in recent years. These habitats are largely the result of efforts by veteran environmental educator Bill Hammond and members of his staff at the Office of Environmental Education and Instructional Development Services within the Lee County School System.

This innovative educator recognized that Florida schools are among the largest landowners in most counties and that the state would be missing a golden opportunity if it didn't foster the development of schoolyard habitats and outdoor classrooms on these sizeable county properties.

From the beginning, several Lee County schools took the schoolyard habitat ball and ran with it, most notably Orange River Elementary. The success of such a program inevitably depends on at least one or two dedicated souls who get things started, keep them going and

A honey bee pollinates a passion flower in a schoolyard habitat.

motivate others to get involved. Craig and Joyce Hortman were those folks in Orange River. Craig is a resource teacher in the Lee County environmental education program and his wife, Joyce, is the kindergarten teacher mentioned earlier. The two share a passion for schoolyard wildlife and teaching through nature.

"Initially," Craig noted, "there were three or four pilot schools interested in setting up a schoolyard habitat. Now, that interest has mushroomed into approximately 20 schools out of the 57 in Lee County."

The LEESCAPES program introduced teachers, students and school administrators in Lee County to landscaping with native and xeriscape plants. Each school received county funds to plant water-conserving species on their grounds. Yet some administrators balked at the idea of extending the concept to include natural succession areas on campus for wildlife and outdoor classrooms.

"A majority of school administrators firmly believe that maintaining school sites in the traditional form of high-maintenance lawns is conducive to the safety and welfare of students," Hammond said. "The initial reaction of urban school administrators was that woods on the campus attract rats and snakes and are cover for undesirable humans to hide in."

In time, however, the bottom line considerations of energy and maintenance savings seem to have won them over.

Teachers have enthusiastically embraced such environmental projects.

"I think the key to getting the whole thing to work is showing teachers that there is a payback," Hortman said. "When we show them how the project will get kids excited about nature, that's a catalyst for them to say, 'Yes, it's worth it, and I want to do this.'"

Joyce Hortman wholeheartedly agrees. She's seen the benefits of using a butterfly garden as a teaching tool with her 5- and 6-year-old students.

"It's had a great impact on the students. They see and touch nature, not just look at pictures in a book or hear about it in the classroom," she said. "The children come out here to the butterfly garden and propagate plants. Sometimes, we take caterpillars back into the classroom in large bowls, give them plenty of food, and watch them pupate and come out as butterflies. The children then release the butterflies back into the garden."

Mrs. Hortman stressed the interdisciplinary learning potential of an outdoor classroom.

"An outdoor project like this," she said, "comes full circle, right back into the classroom with reading and writing. For example, last year we watched some zipper spiders produce terrific webs. The children learned about the spiders and the webs outdoors, then went back into the classroom and wrote stories and drew pictures of them. You can teach math, language arts, social studies, and of course, science. You can do it all with a project like this."

The young pupils themselves are sincere, straightforward spokesmen for their schoolyard habitat. Perhaps more telling than words are the delightful expressions on their faces when they spot a golden orb weaver or a giant swallowtail caterpillar in "their" butterfly garden.

The Hortmans have produced a diverse plant list of the butterfly garden, which includes 25 species of trees, four ground covers, six ferns, 14 shrubs and six vines. At least six different species of butterflies visit the area, and it is frequented by reptiles, birds and an occasional small mammal. Yet this spot on the school campus is only 20 feet wide and 100 feet long.

Orange River is not the only Lee County school site where wildlife can find a home. In nearby Cape Coral, palm warblers, woodpeckers and doves flit around in Pelican Elementary's mini-forest of slash pine, live oak, red maple and eastern red cedar. A few yards away, anoles and skinks dart about under ▷

sycamore and bald cypress trees while dragonflies visit a small, concrete retention pool.

At Gulf Middle School, also in Cape Coral, viable natural habitats were saved from destruction.

"At schools like this they simply built boardwalks and study decks in order to take students out for instruction in these areas," Hortman said.

Boardwalks make it easy for students and teachers to walk into aquatic habitats such as the coastal willow head. Alligators, turtles, gallinules, herons and numerous aquatic insects find a home and a young, interested audience.

Developing schoolyard habitats is catching on around Florida. Lee County schools hope to serve as a model for the rest of the state, and teachers in Polk, Hillsborough, Pinellas, Sarasota, Manatee and other counties are seeking advice and grants for similar projects. Teachers at several schools in Polk County, for example, are interested in developing aquatic habitats by planting native vegetation in and around retention ponds on their properties.

Since money for education is scarce throughout Florida, more schools may consider developing native habitats and outdoor classrooms on their properties. As funds for outside field trips wither, natural history study on the school grounds becomes quite attractive. Developing a school site as a wildlife habitat takes effort, but Joyce Hortman encourages teachers to give it a try.

"This project takes a lot of work," she contends, "but it is well worth every hour put into it."

Through the project, several schools in Lee County have demonstrated that indeed, it is worth the effort. Schoolyard habitats have potential to benefit a variety of nongame wildlife, but perhaps their most important function may be that of promoting an awareness of the many values of wildlife among students, teachers and the community at large.

"You can see how interested the children get," Joyce Hortman said, nodding toward Craig as he showed the kindergartners a Gulf fritillary. "They don't pull back. They're not shy about wanting to see nature. Another great thing that has come out of this is that they're not so quick to want to step on a bug! They see animals differently now. They've learned a different respect for nature. It's something that stays with them."

Isn't that what education is all about?

The Commission's Schoolyard Wildlife Project

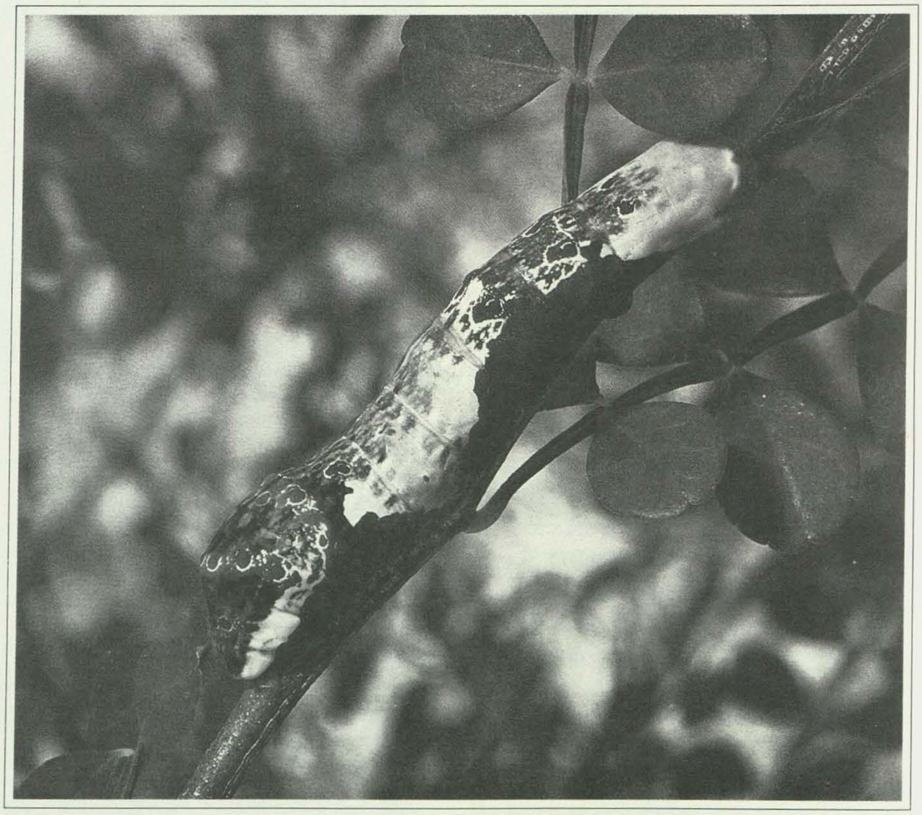
Outside the walls of Florida's classrooms exists a flourishing world of brightly colored plants and animals. They eat and are eaten. They produce offspring or help produce others' offspring.

Without leaving the school grounds, teachers and students can find examples of many ecological interactions among plants and animals. But, how would you bring this fascinating world into the classroom?

In 1990, the Game and Fresh Water Fish Commission began an in-service training program called the Schoolyard Wildlife Project, which was targeted for classroom teachers. The program currently involves a four-hour workshop using the *Handbook To Schoolyard Plants and Animals of North Central Florida* by Peter Feinsinger and Maria Minnor and the *Schoolyard Wildlife Activity Guide* by Linda Cronin-Jones.

The handbook is a compendium of interesting Florida-specific ecology and natural history information. The organisms described in the handbook commonly occur on most Florida schoolyards. The activity guide is a collection of 35 field-tested, discovery-oriented science lessons, geared for students in second through fifth grades. This hands-on guide can be used on schoolyards throughout Florida.

Lenela Glass-Godwin was the nongame education specialist in the Commission's regional office in Lakeland. She recently relocated to Alabama with her husband and young son. James C. Godwin is a zoologist with the Alabama Heritage Program.

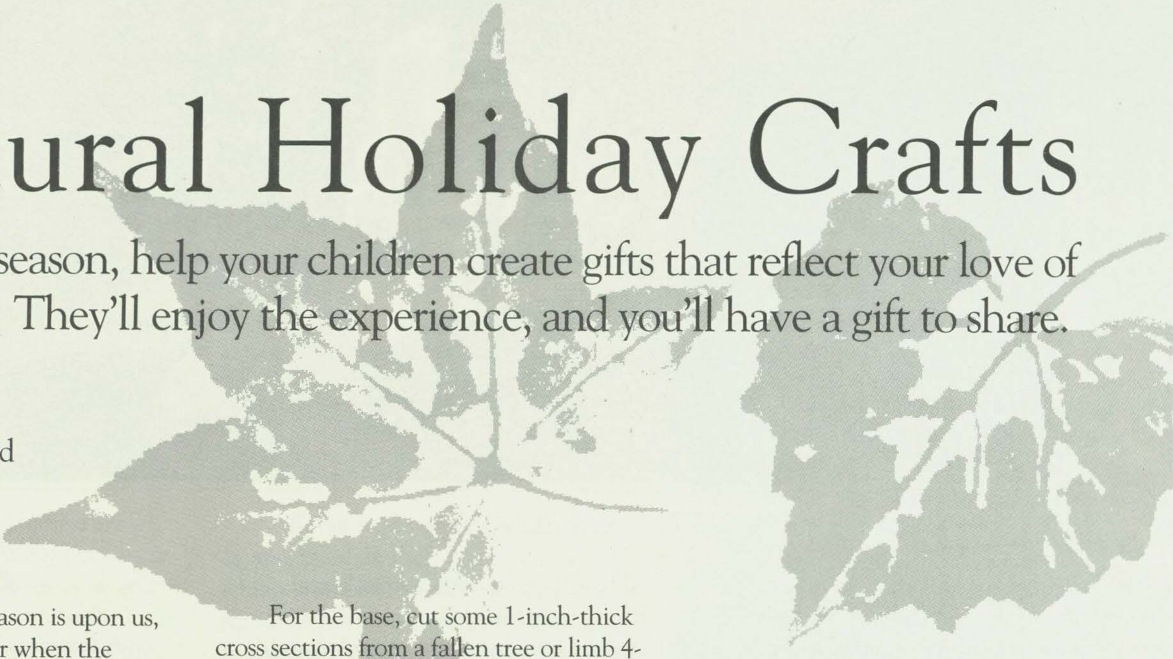


Students learn to look for insects such as this swallowtail larva.

Natural Holiday Crafts

This holiday season, help your children create gifts that reflect your love of the outdoors. They'll enjoy the experience, and you'll have a gift to share.

By Susan Cerulean and
Ann Morrow



The gift-giving season is upon us, that time of year when the quantity of things available for purchase seems unlimited. Sometimes, though, the quality of the gift-giving experience is diminished by all that store-bought excess. We've found it hard to instill our children with the true holiday spirit amidst the overflowing merchandise and bright catalogs.

In recent years, we've taken more time to create hand-made gifts for loved ones with our children. For our young ones, the actual activity and sense of purpose we bring to the gift-making is as important as the end result.

Here is a range of nature-oriented items you can make with your children at low cost and within a reasonable amount of time. And when you photograph this creative process, the recipient also can enjoy this rewarding experience. This holiday season, skip the mall and have some old-fashioned fun!

Natural Collage

A walk in the woods invariably yields a pocketful of natural treasures for later use in craft projects. Acorns, hickory and beech nuts, sweet gum balls, lichens and small pine cones can be glued onto small pieces of wood for a pretty, yet sturdy centerpiece for a holiday table.

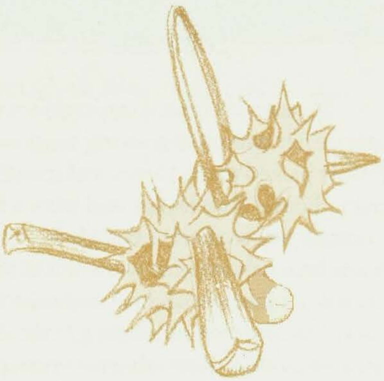
For the base, cut some 1-inch-thick cross sections from a fallen tree or limb 4-6 inches in diameter. Wood glue will hold most objects, but larger and bulkier hickory nuts and pine cones may need to be secured with a hot-glue gun. Insert a candle, a sprig of holly or a fresh flower for a more colorful, three-dimensional effect. These same natural elements can be glued onto a small grapevine wreath, which is another easy afternoon project. These simple activities will delight even preschool children.

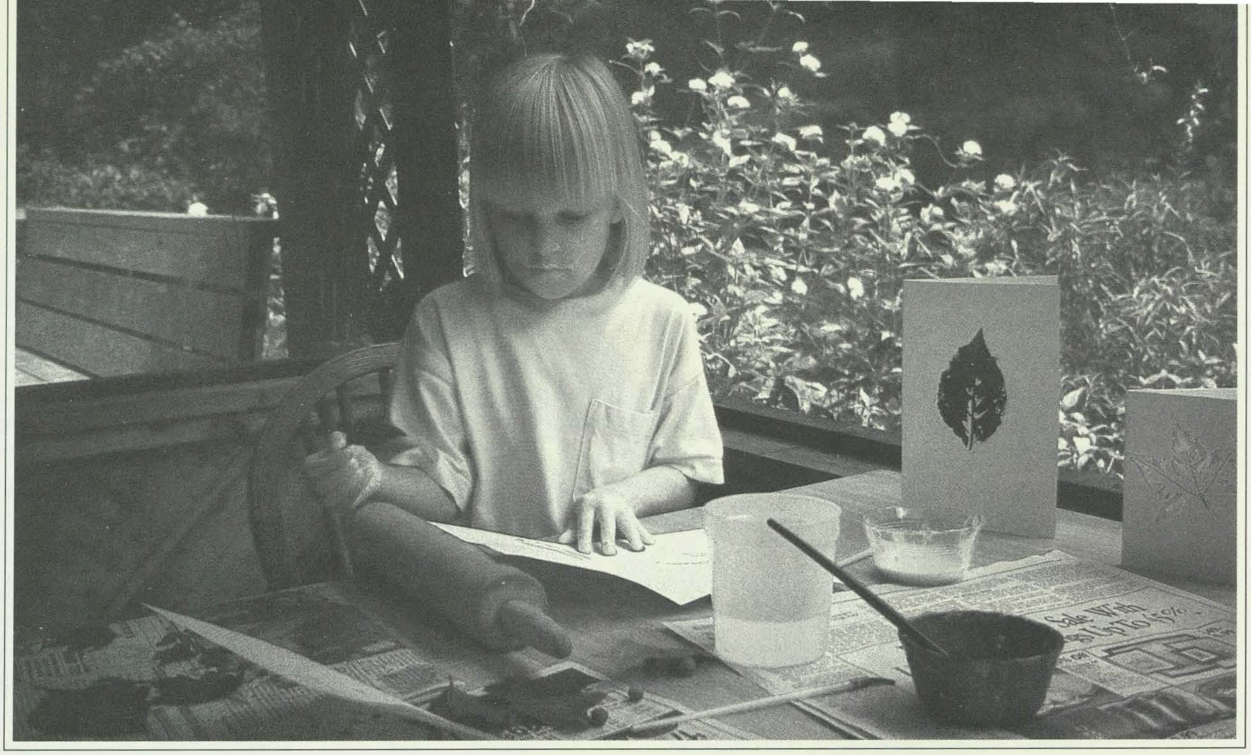
Snowy Owls

Set aside any acorns and large pine cones gathered on your walk. Select cones with flat bases that permit them to stand erect. Stuff the pine cone with small bits of polyester batting until it is uniformly fuzzy and white. Using a glue gun, attach acorn caps or whole acorns for eyes and an individual thorny pine cone scale for a bill.

Chickadee Ornament

Transform sweet gum balls into a chickadee! Using a glue gun, attach two balls together to form the head and body. Then glue sunflower seeds to the "head" to form the bird's bill (one seed for a closed bill, two for an open bill). To the ▷





"body," add a pine cone scale for the tail, and even wings, if you'd like. Lastly, glue on a small loop of gold thread, and your chickadee is ready to decorate a holiday wreath or tree.

Leaf Prints

It's easy to create inexpensive and unique gift wrap and greeting cards using freshly picked green leaves and tempera paint. Leaves that lie flat and have a hairy or rough feel to their underside hold the paint better than those with slick surfaces. Avoid thick leaves such as magnolia and holly. Apply paint sparingly to the leaf underside. With a few sheets of newspaper above and below the paper, apply even pressure to the print with your hand, a rolling pin or printer's roller. As a special touch, identify the leaf species. For large sheets of gift wrap, check with your local newspaper for free end-rolls of newsprint. Experiment with recycled paper or a heavy card stock for handsome greeting cards.

Suet Cakes

Wrap up a few homemade suet cakes in recyclable cellulose wrap and brightly colored ribbon and you'll have a gift any birdwatcher will appreciate. A simple version calls for one part ground suet, melted in a saucepan and cooled slightly. Add one part smooth peanut butter, stirring until blended. When the suet/peanut butter mixture has cooled and begins to thicken, combine with two or three parts cornmeal. Then form the mixture into cakes in muffin tins (for use in suet feeders). Or stuff the blended suet and cornmeal into a pine cone and add a string to suspend from a tree branch near a window. These make nice "drop-in" gifts when visiting neighbors or shut-ins during the holiday season.

Birdhouses

Children age 4-5 and up will enjoy helping you build a birdhouse for a favorite friend or relative. The trick to a successful workshop experience is to cut your wood and have screws ready before you enlist your young helpers. When you build a birdhouse, make sure it is designed for a specific species — not just for "birds" in general. Think about the yard of your gift recipient, and imagine what birds are likely to live there. Then check the nesting requirements of the species you'd like to house.

Boxes should be built of ¾-inch durable woods such as cypress, western cedar or exterior-grade plywood. Use rough-cut grade lumber to assure the birds a foothold when they climb out of the box.

Play Cloth

A favorite element of our children's imaginative play is pieces of brightly colored cloth. They use them over and over to to drape over chairs to create an instant house or fort, wrap into a cape or skirt, or lay out for a pretend river. Last December, we had a lot of fun dyeing and hemming squares of unbleached muslin for young friends' Christmas gifts. We cut the inexpensive muslin into 1-yard squares, then quickly hemmed the cloth on the sewing machine to prevent ravelling. We chose four different colors of dye at the local craft store and found the instructions easy to follow. You could include squares of China silk or other satiny materials in a gift set of dyed cloths. The shimmery drape of silk is even more fun to play with, but definitely more costly.

These are just a few ideas to get you started in the wood shop, kitchen and woods. (For other conservation-minded gift ideas, refer to "Conserving At Christmas," FLORIDA WILDLIFE, November-December 1991.) These ideas won't take much time or money, and the gifts, while simple, will come from the heart.

Susan Cerulean and Ann Morrow are frequent contributors to FLORIDA WILDLIFE.

Hunting in "Hell"

Text and Photograph by
David A. Avant III

There are very few wilderness areas left in Florida these days. What once were productive hunting grounds are now golf courses or shopping centers. Even the untamed "River of Grass" is suffering the effects of man's manipulation and never again will see its heyday.

One of Florida's last remaining untouched areas is Tate's Hell, part of the Apalachicola National Forest and private timber company lands. Situated between the small, coastal, panhandle towns of Sumatra and Carabelle, Tate's Hell is 182,000 acres of dense, forbidding swampland.

Tate's Hell supposedly got its name when an unfortunate fellow named Cebe Tate got lost in 1875. Some accounts say he was searching for a few missing head of cattle. Others claim he was trying to retrieve dogs lost on a hunting trip in the wild swamps and sloughs north and upriver of Apalachicola. Either way, he soon became lost himself. After more than a week of fighting off swarms of mosquitoes and being bitten by a rattlesnake, he emerged from the swamp beaten, bitten and barely alive. At last, he happened upon a group of outdoorsmen who were hunting in the virgin stands of cypress and longleaf pine.

Starved and almost delirious with swamp fever, he gasped, "I've been through Hell itself. I'll never go back into that hellish swamp again!" The name "Tate's Hell" has stuck to identify this area ever since.

All that now remains of the virgin cypress trees are their huge stumps which, covered in green moss, still stand defiantly, as a tribute to the swamp before man hauled out the great trees. Others eventually grew back, the swamp covered its scars, and today it looks much as it did when Spanish explorers first saw it.

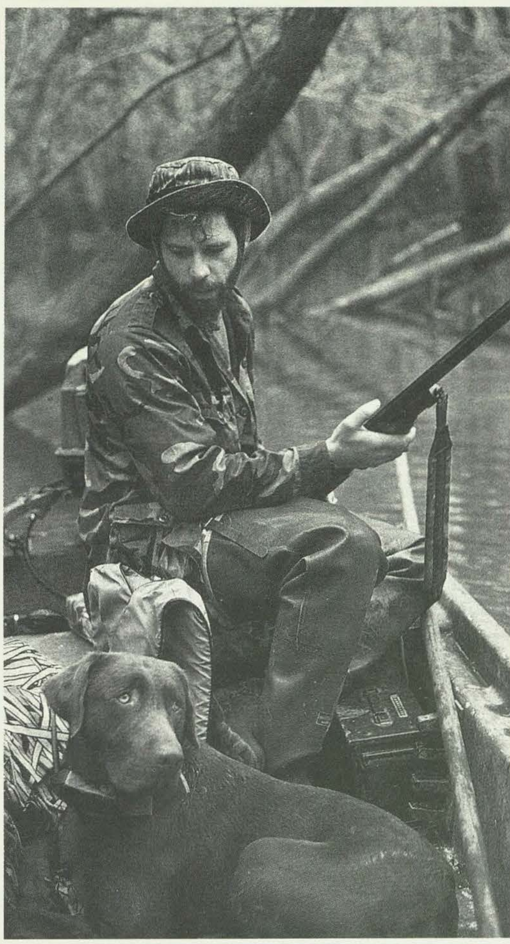
I was awestruck as my guide, Mike Howze, sped his boat through the winding creeks of Tate's Hell in the pre-dawn darkness. His spotlight reflected off the water and cast eerie flickers of light through the cypress festooned with Spanish moss and wild grape vines.

"Don't worry, I know these creeks like the back of my hand. I can run full throttle, even without this light," Howze said. I hung on and prayed he would continue using the light, nonetheless.

We were on our way to one of Howze's duck blinds on the point of a small island up one of the numerous creeks feeding Apalachicola Bay. Gray dawn was upon us as we slid his boat into the blind.

"Let me get those blocks out and see if we can fool some of these slick woodies," he said, as he waded out into the thigh-deep, coffee-colored water to place a dozen wood duck decoys in front of our camouflaged blind.

There was barely enough light to make out a great blue heron and a few coots, just off the point. I readied my equipment and tried to keep Chip, Howze's chocolate Lab, from joining his owner in the water. My guide returned shortly, and we both loaded our guns and waited for daybreak. By now we could see and hear ducks of all kinds passing by as we counted the minutes until legal shooting time.



Hunting guide Mike Howze and Chip.

"It's that time of day," Howze said. "Be ready. They can fly from any direction, and they'll be fast and furious when they come!" I shifted my Remington 1100 automatic and strained to see our quarry through the trees.

"Here they come, right up the creek!" Howze proclaimed, crouching low and motionless in the bottom of his camouflaged, flat-bottomed, wooden duck boat.

The five wood ducks liked what they saw and began applying the brakes as we rose and unleashed a volley of steel No. 6s. The group of woodies split, and I swung on a pair of drakes to my right, ▷

downing one on my second shot, as another disappeared through the cypress. Howze collected a hen and sent the dog after both ducks.

"Chip is 3 years old now," he said, "and an old hand at this game." I agreed, as the Lab quickly produced our brace to hand.

"What a way to start your day." I said, but I'd hardly gotten the words out of my mouth when a large flight of green wing teal burned over our heads. They were out of range before I could put the Remington to my shoulder. When hunting in the heavy salt air, I prefer the Remington 12-gauge, which has a synthetic stock and is parkerized with a matte finish to help protect against the elements. The 2¾-inch No. 6s were fine up the river, but I changed to 3-inch magnums packing steel No. 4s for the open bay.

Another flock of teal passed to my right, just out of range. Howze called them back, and they gracefully swung around and flashed over again. This time we were ready, and as the blast of our 12-gauges broke the silence, two more ducks came down. Chip, working flawlessly, brought them back to the boat.

"Keep your eyes open," he said. "I don't want my dog winding up as breakfast for a hungry gator. Protective regulations have allowed gators to come back strong all along the river. One over 12 feet long was caught as a nuisance alligator at nearby Bay City Fish Camp recently." Luckily, no gators showed that morning, and Chip and I were safe. I had been in these waters before on summer fishing trips and had seen plenty of the toothsome reptiles, some approaching 10 feet in length.

The ducks just kept coming! Usually there were small groups of woodies and an occasional flight of teal. Once, we heard some Canada geese high overhead. We stayed another hour or so, watching the action slowly taper off as the ducks began settling down to feed. We brought down a pair of teal that attempted a landing in our block. Having reached our limit for the day, we gathered the decoys, and Howze cranked up the motor.

Winding our way through the watery maze toward the bay, we jumped ducks on almost every bend. Gradually the cypress gave way to saw grass and hyacinths. Finally we rounded a bend and came into the bay. Mike showed me some of his well-hidden blinds on sandbars and hidden coves, all big enough to accommodate his boat. We jumped huge rafts of gadwall, redheads and buffleheads.

"Look, pintails," he bellowed over the roar of the outboard motor. I strained to see four streaking skyward. On the way back we stopped on a shallow oyster bar, put on our waders, and filled a bucket with Apalachicola oysters. "We call these 'coon oysters,' because raccoons come out on these flats at low tide to eat them. These are cracker-size, and good and salty, since there hasn't been any rain recently," he said, smiling.

Winding our way through the watery maze toward the bay, we jumped ducks on almost every bend.

Howze had built a houseboat out of pecky cypress and nestled it up a small creek. He calls his boat, appropriately, "The Roost." A gasoline generator provides electricity for light, a radio and space heater. He rarely has to use the electric heater, though, since his small wood stove works so well.

He handed me a cup of coffee as I removed my jacket and wool gloves. It was a typical north Florida January day and really not too cold, but the trip across the open bay had sprayed me enough to chill my head and legs. We cleaned our ducks, then shucked and ate the best oysters I've ever had — plump, salty, seated on a saltine and topped with hot sauce. After our hors d'oeuvres, he grilled the ducks on his fire pit on the bank behind the boat. He wraps his ducks with bacon and adds lemon juice, searing the outside, but leaving the center of the meat hot and pink. They were delicious, and I ate all three I had taken.

After we rested, we spent the afternoon upriver doing a little bream fishing, which was slow due to the cool water temperature. We topped off the day by lazily floating down little creeks and hunting "bushy tails" on a small island. After I shot my first squirrel, I was surprised to learn that Chip retrieves squirrels, too.

"Sure," Howze said. "He likes them better than ducks. I guess it's because they're warm and furry. I believe he'd retrieve a deer if it was small enough."

I laughed, but after watching Chip work, I didn't doubt it. Just as darkness fell, Howze wound us out of the twisting creeks and back to the boat ramp in Apalachicola.

Plenty of ducks winter on the Gulf Coast and feed in the shallow marshes around Apalachicola. But be forewarned. Winter is not the time for the inexperienced to be out in a small boat. Unpredictable winter storms can leave you stranded on the mud flats overnight, when temperatures sometimes dip to the teens. Worse yet, a storm can capsize small boats in a flash, bringing on life-threatening conditions.

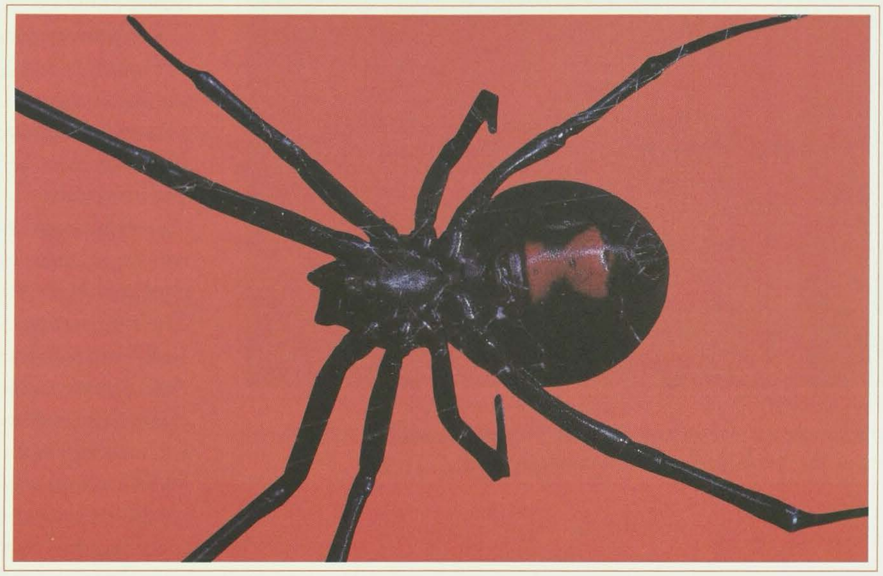
If you decide to hunt the marsh, study nautical maps and tidal charts carefully. Make sure you wear a life jacket at all times. More than one duck hunt has ended in a tragic drowning. Dress for the worst, in case you have to spend the night in the open. Leave your hunting plan and estimated time of return with a friend, in case you do not return at the appointed time. A VHF radio is also a necessity whenever you are on the water. You sure don't want to wind up like poor ol' Tate!

Hunting in "Hell" was a memorable experience. I recommend it to all who really want to get away and enjoy one of the last remote pieces of the wild Florida frontier.

*David A. Avant III is a seventh-generation Florida "Cracker" who has written two books: "**Professional Raccoon Trapping**" and "**Plantation Management on a Sharecropper's Budget**," available from P.O. Box 1711, Tallahassee, FL 32302. Hunting adventures to Tate's Hell are available through Plantation Hunting Tours, 14 N. Cone St. Quincy, FL 32351 (904) 575-1260.*

FOUR FLORIDA WIDOWS

Text and Photographs by James C. Cokendolpher and Dr. G.B. Edwards



Although most Floridians could identify a black widow spider, few may know of the brown, red or northern widows. Scientists have disagreed on the number of widow or hourglass spiders in Florida, but currently four species are recognized. All are venomous and should be treated with caution.

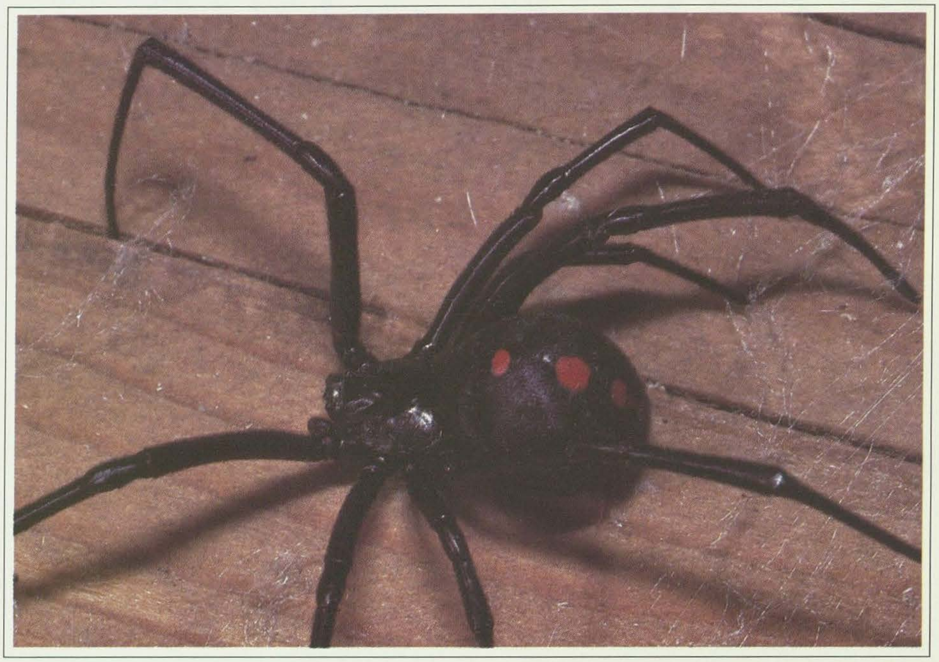
We've been taught that widow spiders are black all over with a red hourglass-shaped mark on the belly. While this describes a typical black widow (also known as the southern black widow), the markings of the brown, red and northern widow spiders are somewhat different. Laymen and even some medical professionals often assume that any darkly colored spider with red or orange markings is a widow spider.

All widow spiders are smooth and shiny, ranging in color from light tan to black. The abdomen may be marked with prominent white, yellow and/or red patterns, and when a female is starved or has recently laid an egg mass, her abdomen will appear quite dull and wrinkled. The abdomens of juveniles and males are often so differently marked that they are not immediately recognized as widow spiders.

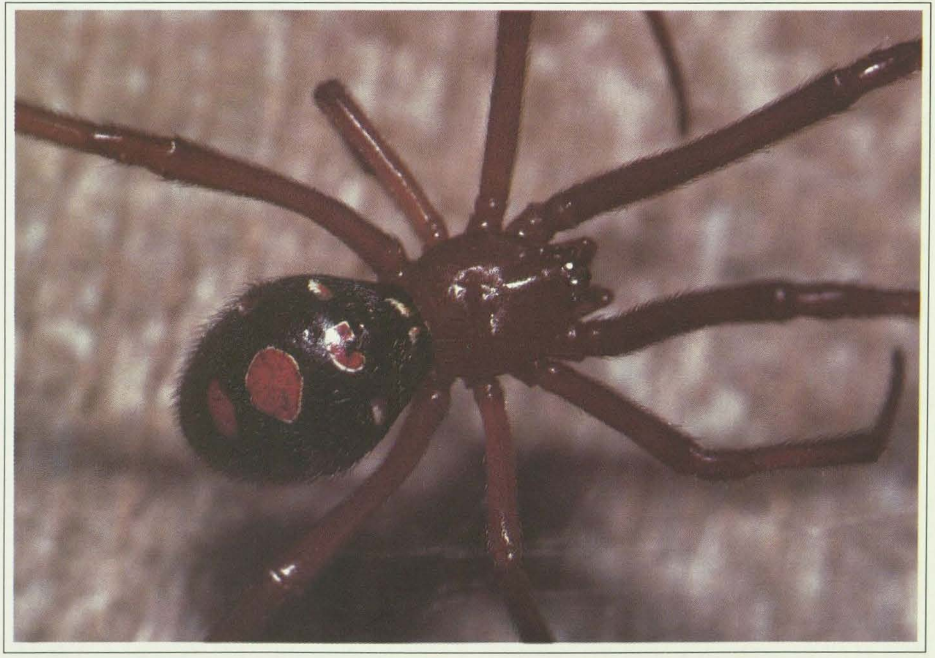
The spider's abdomen generally has an orange to red hourglass marking. Unfortunately, this mark is not always consistent, making identification more difficult. The two halves of the hourglass may even be separated and appear as two distinct triangles, or the mark may have an irregularly shaped border or appear as a spot. Most widow spiders have tan to black colored bodies and legs. The red widow, as the name suggests, has red to reddish-orange legs and cephalothorax (fused head and thorax).

Southern black widow spiders are found in fields or open areas under rocks, wood and other debris. Rodent or small mammal burrows and most other protected cavities can serve as a nesting site for the widow. So can tall weeds or cultivated crops. Birdwatchers, campers and sportsmen should be especially careful when entering blinds or cabins that have not been used for extended periods. Outdoor privies and other small outbuildings always have been a favored habitat for black widow spiders. Empty nursery cans, especially the one-gallon size metal cans, provide ideal web sites for black widows. Containers sheltering water, gas or electric meters are other likely spider refuges. Around the house, widow spiders can be found in garages, attics, cellars and crawl-spaces as well as on outdoor furniture.

While black widow spiders are found throughout the state, the other species are more restricted in their Florida distributions. The brown widow probably was introduced into Florida. It is most abundant in coastal cities in the lower part of the peninsula, but it recently has ▷



Unlike the southern black widow, the northern widow spider female has several red dots on the abdomen. The two halves of the red hourglass mark are separated.



The red widow has reddish legs and cephalothorax. The female often has red, yellow and white markings on the abdomen, but the venter lacks a complete hourglass mark.

been recorded as far north as Jacksonville on the east coast and the Tampa-St. Petersburg area on the west coast. Its webs are found on buildings, under benches, in general, around human structures.

The red widow has the most restricted distribution of any North American widow spider. It is found only in sand pine scrub habitats in central and southeast Florida, where it spins its web onto palmettos.

The northern widow spider is known in Florida from regions west of Tallahassee and is especially abundant in the vicinity of Torreya State Park, where it makes webs on the ends of tree branches and on shrubs.

Adults of the black and brown widows are active year round and do not appear to have a seasonal breeding cycle. The northern and red widows have a well-defined reproductive cycle in Florida. Adults mate in late spring with the males dying shortly thereafter. Females remain with the egg sacs during the summer, but by late fall all adults are gone. Juveniles spend the winter in the forest litter, maturing and moving up into the vegetation the following spring.

Adult females lay their egg sacs in an upside-down cup constructed of silk and suspended within the female's web. The average development time of the eggs is two weeks, but this varies with air temperature and the type of widow spider. The colder the air, the slower the development. Spiderlings will spend from one day (during summer) to a month (during winter) inside the sac before leaving. Without the aid of the mother, young spiders emerge from the tough sac and generally congregate around it for a few days. Red widows congregate much longer than the others. Although the female will guard the egg sac, she is occasionally cannibalistic on some of the newly emerged young. A female guarding an egg sac is more pugnacious than normal and is more likely to bite an unintentional intruder.

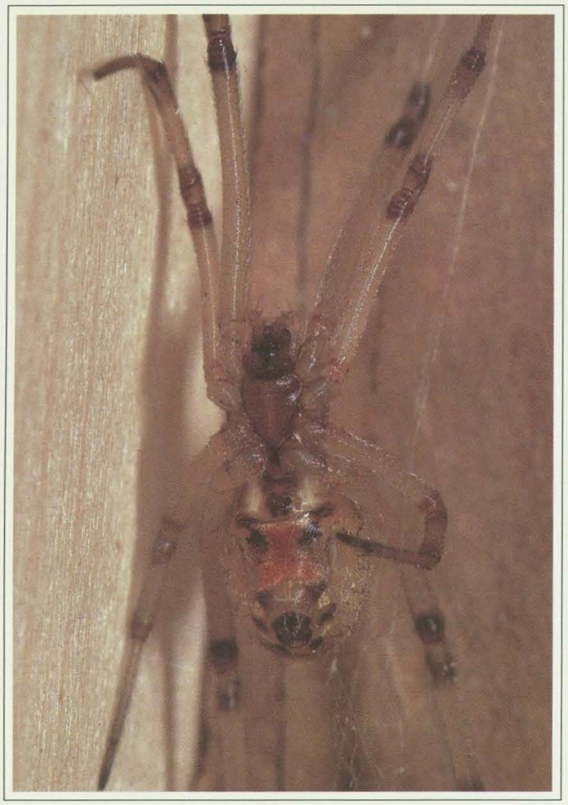
After dispersing from their mother's web, the spiderlings begin spinning an irregularly shaped web. As they grow, they capture progressively larger food items and extend the size of their webs. In protected areas especially rich in food, widow spider webs often will be very close together and sometimes touch. Under ideal growth conditions, a female will reach adulthood in two to five months and will live for one to two years. While adult females remain in their webs, adult males leave theirs to search for females.

All Florida hourglass spiders appear to be dangerous to humans and domestic animals. Their venoms are about 15 times more poisonous than an equal weight of rattlesnake venom. Fortunately, these spiders inject a relatively small amount of venom — many times less than that of rattlesnakes — when biting. Because the poison-producing apparatus of these spiders is equipped with muscles, they can control the amount of venom being injected. Thus, the symptoms of widow spider bites vary with the amount of poison being received by the victim. The large females are the main threat to humans, since the fangs of smaller males and juveniles are often too small to penetrate clothing or the tougher skin of hands and feet. Even the fang of an adult female is only about 1⁄15 inch in length.

While both male and female widow spiders possess poison glands and fangs, the glands of the male are only about one-third to one-half the size of the female's. The glands of the female increase in size and the venom increases in strength as she ages. The male is opposite; his glands become inactive and atrophy with age. By the time he is an adult, his venom is so weak and meager that he is incapable of producing serious symptoms in humans.

Widow spiders are wholly carnivorous and cannibalistic. Young brothers and sisters eagerly eat each other when other foods are not plentiful. Likewise, adult females eat other females that might wander into their webs (a rare event) as well as any incautious suitor. The habit of devouring one's mate, which actually happens infrequently, is certainly the reason for the coining of the common name. Adult female widows can go for several months without food. One specimen in captivity survived nine months without feeding.

People are not the only enemies of widow spiders. Several kinds of wasps feed spiders, including widow spiders, to their young. Like something out of a horror movie, a female wasp will attack a spider and inject a paralyzing venom. The paralyzed spider is then entombed inside a chamber with a newly laid wasp egg. When the egg hatches, the hungry larva goes about its business of slowly eating the living, but paralyzed, victim.



The brown widow spider has a highly variable pattern consisting of black, white and yellow or reddish markings. The hourglass mark on the venter is orange.

A small fly also preys upon the unhatched eggs of widow spiders. Without attracting the female spider's attention, the tiny flies land on the spider's egg sac and begin laying eggs. The eggs then hatch into fly larvae that, while hidden in the sac, consume the spider eggs.

Some lizards and birds are known to eat widow spiders, as do scorpions, centipedes and other spiders. Scientists currently are studying an unusual association of widow spiders and some cellar or pholcid spiders. The webs of the two spiders are sometimes observed to intertwine. It is uncertain which, if either, spider is benefiting most from the association. Both spiders are known to eat each other when possible.

Spider Bites

The first published records of widow spider envenomation in Florida were in 1839. From then until 1943, 126 cases were reported, although others no doubt went unreported or were misdiagnosed. Since 1959 at least eight people have died from widow spider poisoning in Florida. The symptoms are similar to other maladies, so much so that some operations for appendicitis, acute pancreatitis and ruptured gastric or duodenal ulcers were needlessly performed in the first half of the century.

Because there is no immunological test for diagnosing widow spider envenomation, some less severe poisonings are probably still being misdiagnosed. The incidence of widow bites undoubtedly has decreased with the less frequent use of outdoor toilets and the increased use of mechanical cultivation and harvesting of crops. The outdoor privy was clearly a major site for spider-human contact.

Like most spiders, hourglass spiders are shy and retreating. When disturbed, a ▷

widow spider often will crawl to the corner of its web, fold its legs and feign death. Brown widows sometimes will drop out of the web to the ground, where they remain very still, as if hiding. Bites usually occur after the spider's web is disturbed. Typical innocent actions that may result in spider bites include touching one that has attached itself to the underside of an object, putting on clothes that harbor a spider or rolling over on one that has entered a bed or sleeping bag.

You may not feel a spider biting you, or you may notice a slight sensation like a pin prick. Sometimes there is swelling and redness at the area of the bite. The two tiny holes left by the fangs are seldom visible to the naked eye. Initially, there may be pain at the sight of the bite, which lasts for an hour or two with subsequent cramps in a major muscle group near the bite. Effects of the venom often start within 30 minutes and become intense in one to three hours.

The pain generally spreads from the site of the bite to the abdomen, where the muscles become very rigid. Tightness in the chest, difficulty in breathing, paralysis of the limbs, insomnia, headaches, nausea, vomiting and profuse perspiration are generally present. Acute psychosis may develop. Hypertensive individuals are susceptible to cerebral, heart or kidney damage or failure as blood pressure generally rises, and there is a marked increase in pulse rate, up to 120, during the first hours.

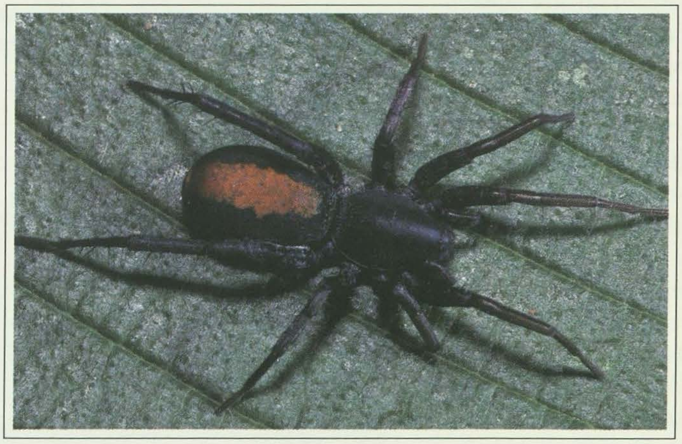
Left untreated, the acute symptoms generally subside after two or three days. Complete recovery from spider poisoning may require several months. This period of convalescence can be marked by weakness, fatigue, pains, headaches, insomnia and impotence. Healthy adults have died from widow bites within 14 hours to seven days. From the limited records available for the United States, it appears few deaths can be attributed directly to the lethal potency of the spider venom. In the reported cases, the patients either were very young or perhaps bitten by several spiders at the same time. More commonly, the deaths are attributed to cerebral hemorrhage or apoplectic stroke. In the earlier years of this century, deaths resulting from infections gaining entrance through the wounds were more common.

If You're Bitten

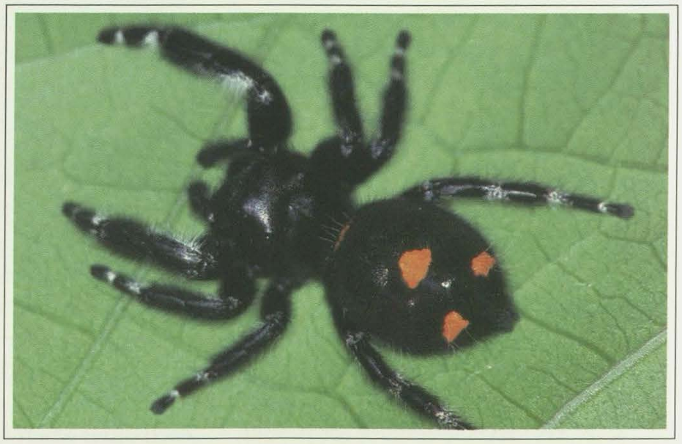
See a physician as soon as possible after a widow spider bite. Carry along the dead spider — try not to smash it beyond recognition — for expert identification of the culprit. Do not take alcohol, morphine or barbiturates for the pain, as these substances interfere with breathing. Because of the small volume and neurotoxic nature of the venom, a tourniquet will have no beneficial effect. Treatment by the physician generally includes specific antivenin and calcium gluconate injections. Muscle relaxants are sometimes given when the calcium therapy does not relieve the pain. Unfortunately, antivenin is not always available, because of its short shelf-life and the infrequency of patients. Those properly treated with antivenin should recover within one to three hours.

A group of scientists from around the world have banded together to study all aspects of hourglass spiders. Anyone wishing to aid their studies with data or financial support should contact either author or Dr. Robert Raven, Queensland Museum, P.O. Box 300, South Brisbane, Queensland 4101, Australia.

Free-lance writer James C. Cokendolpher lives in Lubbock, Texas. He is a research associate of the Florida State Collection of Arthropods, Gainesville. Dr. G.B. Edwards lives in Gainesville and is the curator of Arachnida and Myriapoda at the Florida State Collection of Arthropods, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.



Some sac spiders (above) and jumping spiders (below) are sometimes misidentified as widow spiders.



SHUT UP & FISH!

Target: Lake George

Text and Photographs by Stew Hudson

The Navy F-18 came in low from the southeast, seemingly just above the tops of the pine trees that stood almost at the water's edge. With a slight tip of its wings, it swung northward, descending toward the water until it almost disappeared into the early morning haze. Then with a sudden burst of sound, it rose, climbing almost vertically. It rolled over once and leveled out heading northeast. The sound of its engines lingered after the plane was out of sight. The planes came all morning long, several minutes apart, making howling runs on the targets four miles out in open water.

The scene was north Florida's Lake George, and the targets were reportedly the sites of the some of the best striped bass fishing on the lake. We had launched before sunrise from the shallow, sand-washed ramp at Blue Creek, intending to prospect for stripers around the barge fenders, where the St. Johns River empties into the south end of the lake, then head to the bombing range.

A week before, I had watched Game and Fresh Water Fish Commission biologists electro-fishing for stripers destined to become the parents of the next generation of hatchery-bred bass, but today the Navy had first dibs. It would be a year before I could return.

Accompanied by Lawson Snyder, then-project leader for the Commission's lower St. Johns River project, I at last launched at the Pine Island Fish Camp near Seville, and idled through a dense fog until we found the edge of the circular arrangement of pilings that makes up the south bombing target. Kevin McDaniel, another Commission biologist, and his partner had arrived ahead of us. McDaniel held up three fingers as we approached, indicating that they had taken three stripers already.

Striped bass swam the St. Johns River before the arrival of man. These natives have survived the centuries, but in numbers far fewer than the available forage would seem to support. In the 1970s, stripers taken from the Carolinas were introduced to the river in an effort to bolster native stocks, but for some reason, natural reproduction levels remained low.

All brood fish now used by the Commission's Blackwater and Richloam hatcheries originate from the St. Johns (males) and Lake Talquin (females), near Tallahassee. This stocking program is believed to be the sole support of the river's existing striped bass fishery. Without a doubt, there are more striped bass in the St. Johns as a result of this ▷

program than ever before. Although the fish are hatchery-bred, they are released as fingerlings and grow to be truly wild fish.

During the summer and early fall, stripers head for the spring holes and spring-fed tributaries to escape the uncomfortably warm water of the river. When winter cold waves lower the water temperature, the fish scatter, feeding on the large schools of gizzard shad that inhabit the river, regaining the conditioning they lost during the warm months. By January they have reached their prime. Winter striper fishing on Lake George is probably as good as it gets anywhere on the river.

Even though stripers frequently feed in open water, they prefer to remain near structure between foraging forays. The two bombing targets near the south end of the lake provide ideal structure. Each target consists of several dozen pilings driven into the lake bottom in a quarter-mile-wide bull's-eye configuration. Stripers seem to move almost constantly, patrolling the structure, chasing down their hapless quarry rather than holding in one spot and ambushing their prey. A particular piling may hold no fish at all for a while, only to yield two or three a half-hour later.

As usual, Snyder connected first. He had cast a silver Rat-L-Trap beyond a piling and after letting it sink for a five count, cranked it in so that it passed inches from the post. Afraid it would snag, he swung the rod to pull the lure away. The striper struck in mid-swing, putting a sharp bend in the rod. It then tried to put the piling between itself and the boat. After some fast maneuvering with the trolling motor, the fish was safely in open water. Snyder took a second on his crankbait before I connected with one on a fly rod and streamer.

One of the secrets of success with casting tackle is to keep the bait in the water. A fly rod is no competition for casting tackle if you only count the number of casts made. Lawson made two casts with his casting rod to my one. Even with a high-density, full-sinking line on my seven-weight rod, I had to make a long count while the chartreuse bucktail sank through the 9-foot-deep water column. Luckily, mine ran for open water rather than trying to hide behind the piling.

My ancient Pflueger clattered as it gave line to the panicked fish. The striper turned to circle the boat just as the backing was beginning to show through the stripping guide. After a series of attempts to return to the bottom, it tired enough to be led close to the boat for Snyder to net it. Big fish honors went to McDaniel — who also caught the day's first fish — for a striper that topped 10 pounds.

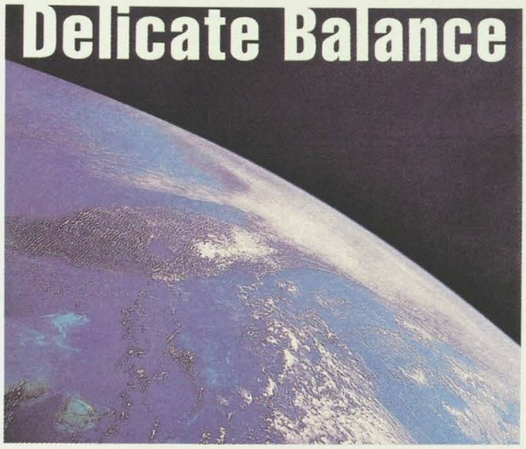
By the way, the Navy doesn't use real bombs on the Lake George targets. The operation consists of dropping smoke markers. A spotter in a tower on shore scores the hits. The intent is to teach fighter pilots marksmanship, not to make chum of the native fauna.

The south target is accessible from a number of ramps in the Astor area, including three designed for deeper-draft boats. To reach the middle target, launch from a ramp in Seville. In good weather, you can see either target from the other.

The shallow, eelgrass-covered flats that circle the edge of the lake hold plenty of largemouth bass. It's always a good idea to take along some poppers and weedless streamers just in case the stripers are making their rounds somewhere other than at the targets.

Stew Hudson is a free-lance writer from Orlando.

The pilings (left) not only form a target for Navy pilots' dummy bombs, they act as magnets for striped bass.



Florida Mastiff Bat (*Eumops glaucinus floridanus*)
Florida and Federal Status: Candidate for listing

If you're keeping a list of the rarest of Florida's wildlife, don't overlook the Florida mastiff bat. Although these animals were routinely reported along Florida's tropical southeastern coast in the 1950s and '60s, they've been sighted only twice since 1967.

The mastiff is the largest of Florida's 16 bat species, measuring 4-6 inches and weighing only about 1-2 ounces. Its body is covered by short, glossy black or brown fur. Large, leathery ears about 1 inch long join together between the eyes and characterize the species. Mastiffs are part of a small, distinctive family of bats, called "free-tailed" bats, which can be distinguished by a tail that projects beyond the tail membrane.

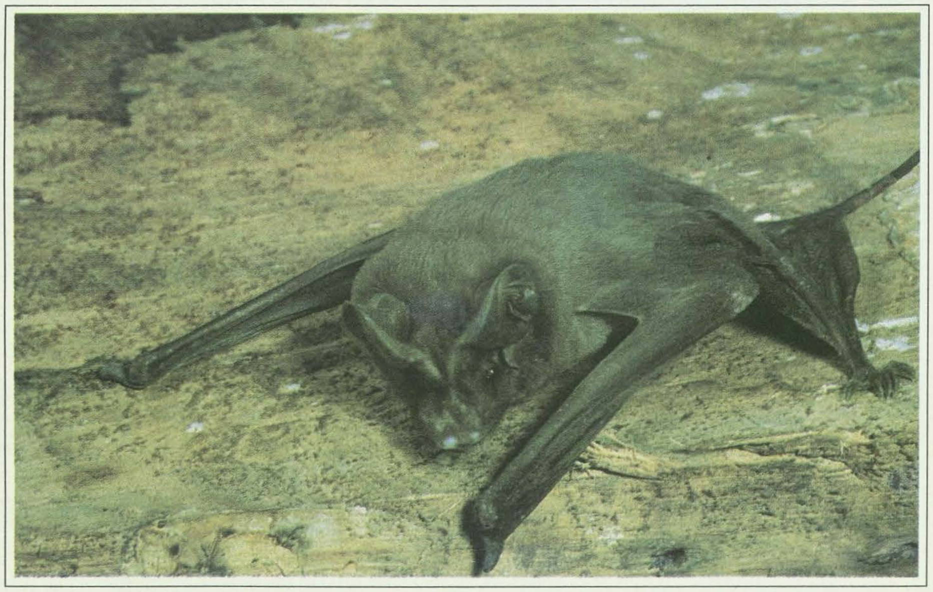
The mastiff bat confounds human efforts to study it because of its solitary nature, swift, high flight and an apparent habit of leaving the roost well after dark to feed. Night-flying insects, including beetles, flies, moths and mosquitoes, are the preferred diet of mastiffs.

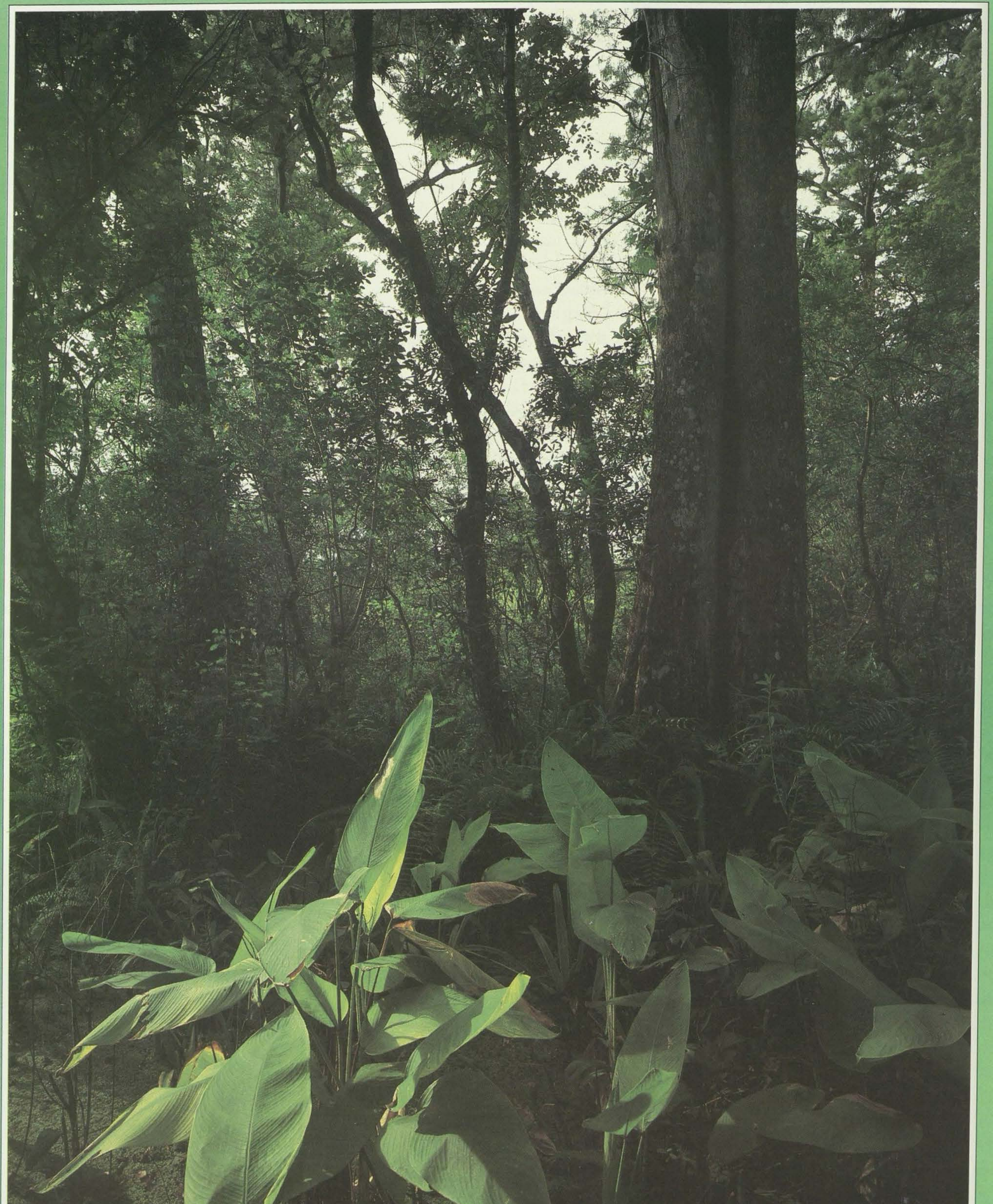
Like many wild animals, the species lost most of its natural habitat of pineland and hammock in southern Florida to explosive human development. Along with the near total loss of natural areas, heavy insecticide use in southern Florida may have contributed to the dramatic decline of the mastiff. Like all bats, the mastiff has a low reproductive rate and cannot respond quickly to population declines. Females give birth to only one young per year. June through September are the only known periods that young have been found.

Hollows and cavities in large, old trees are the primary roosting and nesting habitat of the mastiff bat. Some segments of the population also make use of available artificial roosts such as Spanish tile roofs, chimneys or old buildings. During the post-war development boom in Dade County, bats probably shifted their roosts to human habitations as woodlands were cleared. This may explain the relatively large number of specimens collected during that period.

In 1979, a small group of eight mastiffs was found roosting in a cavity of a pine tree near Punta Gorda. It was a special discovery because it was the first confirmed find since 1967, and the only documented occurrence outside of Dade or Broward counties. In 1988, a pregnant female was found in Coral Gables, offering hope to biologists and conservationists that the mastiff bat was hanging on to a tenuous existence. Symbolically, this particular bat had crashed into the seventh floor balcony of a steel-and-glass, high-rise office building.

— Mark Robson and
Susan Cerulean


ROGER W. BARBOUR



JAMES VALENTINE

A Camelot For Two

By Elizabeth Cutlip

A 3-year-old boy sat on a couch looking out the window with a neighborhood gentleman at his side. From inside their warm chamber, they studied the harsh weather outside as a tiny, black-and-white bird flew up and landed on the window sill. The man nudged the little boy and said, "Look, Paul, look at the birdie. Can you say 'bird'?"

The little boy looked up at the man and said matter-of-factly, "Chickadee."

The youngster's father was chief naturalist at an Audubon sanctuary in New Hampshire, and naturally, his parents had seized every opportunity to teach Paul about his rich natural environment.

Later, I was born on the same sanctuary where Paul, my brother, had announced the arrival of the chickadee. Soon afterward, however, our family moved to another Audubon refuge, the Corkscrew Swamp Sanctuary in southwest Florida, where this story really begins.

Corkscrew is an 11,000-acre swamp that served as my playground and learning environment for 12 years. As a family, we voluntarily rid ourselves of the television and made it a practice to enjoy some aspect of the sanctuary every evening. My big brother and I were left to our own imagination and creativity for entertainment. Our unleashed curiosity enabled us to explore every inch of the preserve and its wonders.

Very rarely did we pluck anything out of its natural environment. We were taught to observe only and to leave nature's creatures in their own environment, where nature rules them. Although we lived in the sanctuary, we knew we were really just visitors there.

One sunny summer day we were preparing to play together on the front lawn. Mom had always taught us to watch carefully to keep from alarming the sanctuary's wildlife. So, Paul and I were searching the area for any animals with which we would have to share our playground. On this particular day we found a 5-foot eastern diamondback rattlesnake! We alerted Mom, who called Dad at his office. The standard procedure was to keep your distance, while someone else retrieved a large, metal garbage can and a snake-catcher. When Dad arrived, Paul and I were in place, ready to help him catch and relocate this dangerous, yet magnificent, animal.

"Stand back, kids and be careful," Dad said. We distracted the snake as Dad stood behind it and carefully slipped the loop of the snake-catcher around the reptile's thick, round body. The warning sound of the snake's rattle never ceased throughout this procedure.

As Daddy picked up the animal with the snake-catcher and lowered it into the can, I could clearly see the diamonds on its back and thought, "What a nice sound from such a dangerous animal." If I hadn't known the soft sound of the rattles was a warning signal, it would have seemed much like the soothing noise of a baby's rattle.

Another reptile that provided some excitement was an 8-foot alligator we called Oscar. He lived in the small canal that ran right next to the visitors center. Over time, Oscar lost his natural fear of humans. Once, Daddy came out of his office just in time to see a guest holding his son's arm out to feed Oscar a chicken bone so the mother could get a picture. He immediately stopped them, explaining that alligators don't care where chicken bones end and little boys' hands begin. Daddy decided it was time to relocate the gator.

What an exciting operation for a 7-year-old to watch! All of the men at the sanctuary worked together that day, luring the gator into a culvert that would serve as his cage during transportation to a remote part of the sanctuary. Oscar put up a good fight, smacking his long, powerful tail back and forth in the water, resisting captivity. It was sad to see my old friend taken away that day, but I knew he would be safer where he was going.

When evenings settled over Corkscrew, we would walk or ride bicycles around the two-mile boardwalk that was open to the public. Or we would take "Beulah," an old army jeep with poor brakes, to the northern end of the sanctuary and watch the sun set over a freshwater marsh. At Corkscrew, sunset is much more than a mere ball of light sinking below the horizon. The sky *explodes* with color. Great egrets and white ibis fly in perfect formation across the firmament and back to their nests after a long day of probing the shallow waters for morsels of food. Alligators, snakes and frogs emerge from their day of rest to begin their nightly roles as predators and prey. Even the nighttime sky is awesome in the swamp, far from the impeding lights of a big city. Sometimes there were meteor showers that left us speechless except to howl "ooh!" and "aah!" over the spectacular sky show. Corkscrew's natural sound effects added the perfect touch to a show reserved for swamp dwellers like birds and reptiles... and Paul and me. Sometimes, we could hear barred owls calling to each other long after we went to bed. Dad would often go outside and respond to them. We could hear him calling, *"Who cooks for you, who cooks for you allll?!"* Eventually he would lure these raptors into the trees right in front of the house. Then we would sneak out with flashlights and shine them up the trees, watching as the beautiful, big-eyed barred owls turned their heads all the way around!

"How do they do that?" I repeatedly wondered when I tried to duplicate their actions.

Sounds such as the constant cry of hungry baby wood storks, the warning rattle of a diamondback, and green tree frogs singing after a gentle rain will always remain vividly in my memory. Listening to the rain falling on gigantic fireflag leaves in the swamp and to the rustle of wings in the wind as flocks of ibis fly home to their nests at sunset will always bring back memories of my childhood. Images like spotting the first swallow-tailed kite of the season, counting all the baby alligators in the lake and knowing just where to look for the beautiful white ghost orchid to bloom every spring are still vivid recollections. My most peaceful and humbling sensation though, is the memory of hugging a 500-year-old cypress tree. This is what stimulates my senses and brings meaning to my life in the Corkscrew Swamp.

Few children have the good fortune to be raised in a totally natural environment and to revel in all the wonders associated with it, and I realize such a childhood might sound rather strange to some. Yet, the secrets that Corkscrew unveiled for me as a child have been key ingredients in shaping my adult perspective. Children who are taught that the outdoors is not just a place to play, but a resting place as well, always will carry with them the ability of drawing peace and strength from their natural surroundings.

JAMES VALENTINE

The pressures of society now take their toll on every one of us, including children in middle and even elementary schools. Those who develop a relationship with nature at a young age will be armed with a strength that can protect them from the seductive and ever-present lure of alcohol and drugs.

Take, for instance Matthew Deakins, a teenager from Dunellon who inspired a video called "Hooked On Fishing, Not On Drugs." Matthew wrote a letter to the Future Fisherman Foundation about how he uses fishing to "work things out." In the midst of those turbulent middle school years, Matthew deflected peer pressure and shunned drugs to concentrate on fishing with his family and friends. His story has inspired others to follow suit.

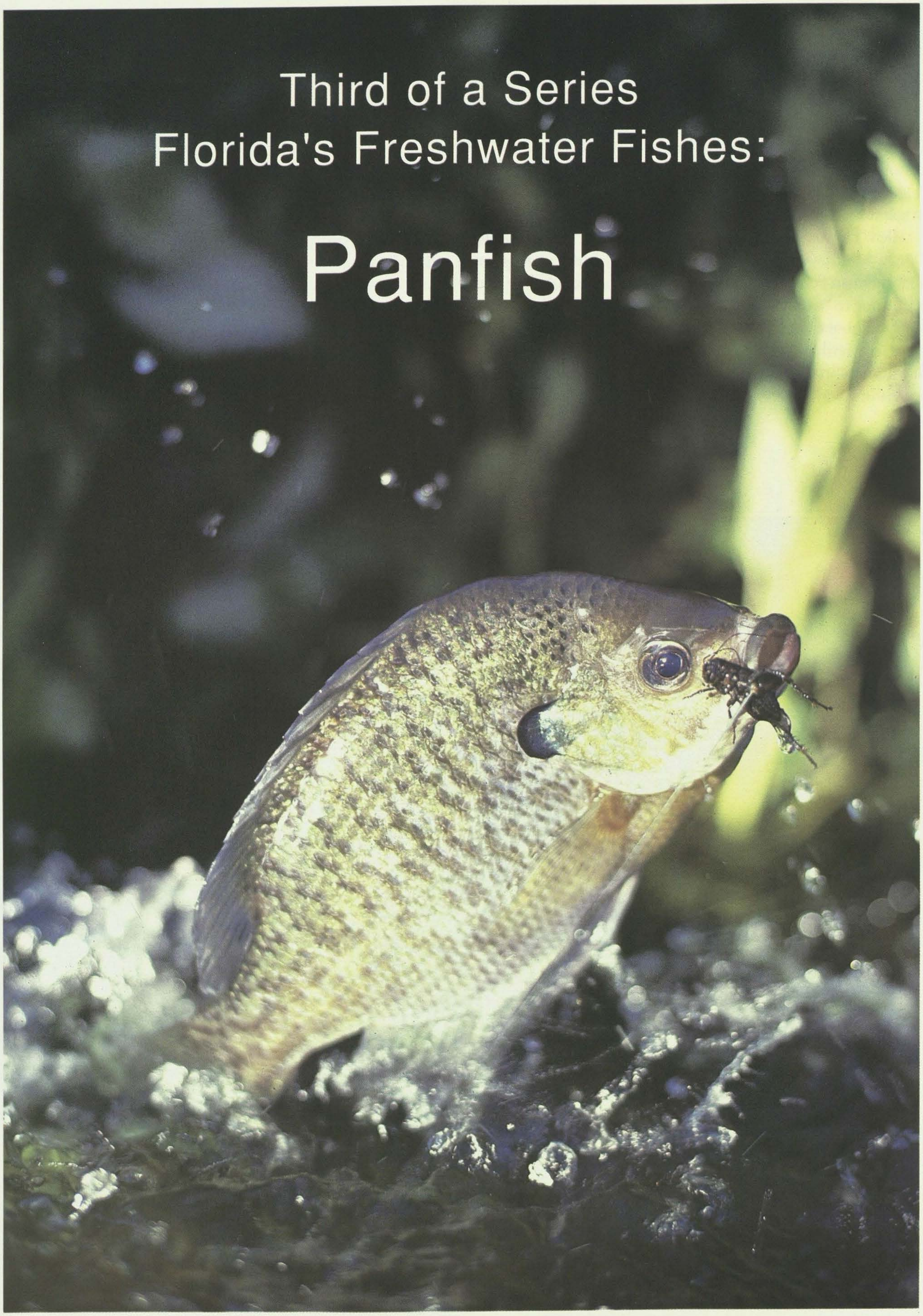
It's easy for Paul and me to understand Matthew's message. After all, we grew up in our own Camelot — Corkscrew Swamp Sanctuary.

Elizabeth Cutlip is a former communications student intern at the Commission's Tallahassee office. A graduate of Florida State University, she now works for a private firm that manages trade and professional organizations.

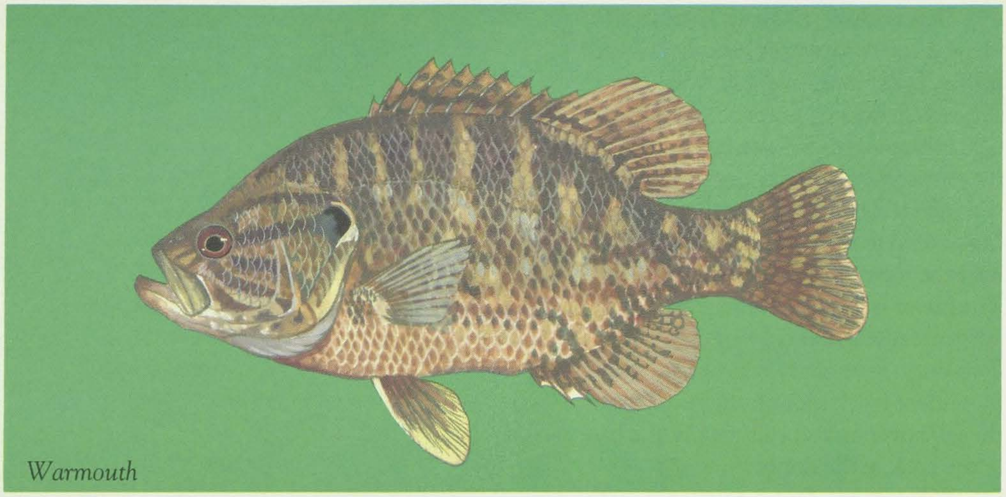
Growing up in a totally natural environment helped shape the adult perspectives of the author and her brother.

Third of a Series
Florida's Freshwater Fishes:

Panfish



DOUG STAMM



Warmouth

By Mark A. Trainor

Illustrated by Duane Raver Jr.

The first two installments on Florida's freshwater fishes featured black basses (March-April '92) and temperate basses (July-August '92). As you may recall from the first installment, black bass are members of the sunfish family. Now, let's examine some other so-called sunfish.

The sunfish family includes three major groups: "true" sunfish or bream, crappies and black bass. True sunfish include a group of panfish belonging to the genus *Lepomis:* warmouth, spotted sunfish, bluegill, redear sunfish and redbreast sunfish, plus many other sunfish species either not found in Florida or too small or too rare to be noted by the angler. The flier (genus *Centrarchus*) and black crappie (genus *Pomoxis*) also are members of the sunfish family.

The technical name of the sunfish family is *Centrarchidae*, meaning "nest-builders." The males of each species construct a nest, guard the eggs from predators and protect the fry until they leave the nest.

True sunfish are extremely popular with anglers because they are easy to catch, good to eat and, for their size, wage an amazingly strong fight. Their bright, colorful appearance accounts for their name "sunfish." Their size, just big enough for the frying pan, gives rise to the nickname "panfish."

It is interesting to note that state records for the following seven species of fish come from waters in, or west of, the Suwannee River watershed.

WARMOUTH

Common Names - warmouth bass, warmouth perch, goggle-eye, redeye, goggle-eyed perch.

Description - The warmouth closely resembles a bass. Its stout, deep body is similar to that of a bluegill or redear sunfish, yet it has a large, bass-like mouth. The red eye and large mouth are the first conspicuous field marks of a mature warmouth. Their coloring varies from brassy to dark olive-green, often with a purple tint overall. Broad, irregular, dark bars give it a mottled appearance. The soft-rayed portions of the dorsal and anal fins are marked with rows of dark spots. Three or four conspicuous dark stripes radiate back from the eyes across to the cheeks and gill covers.

Subspecies - There are no recognized subspecies. However, warmouths readily hybridize with other members of the sunfish family.

Range - Found throughout Florida.

Habitat - Warmouths inhabit swamps, marshes, shallow lakes, slow-moving streams and canals with soft, muddy bottoms. This species prefers to stay around aquatic vegetation, stumps and snags and under the banks of streams and ponds. They have more tolerance for muddy water than most panfish.

Spawning Habits - Warmouths are solitary nesters that prefer to build their nest adjacent to a submerged object in a wide range of water depths. They often spawn more than once a year, usually between April and August. Females may produce 3,000 to 23,000 eggs.

Feeding Habits - Warmouths are carnivorous. Crayfish, shrimp, insects and small fishes make up the bulk of their diet. Most of their feeding is done in the morning, as they seem to sleep at night.

Age and Growth - Warmouths are capable of living up to eight years and may reach a length of 12 inches and a weight of approximately 1 pound.

Sporting Qualities - The warmouth is one of the more easily caught sunfish. Anglers using cane poles and natural baits or spinning tackle with small topwater lures and shallow-running spinners have the most success. They strike hard, frequently breaking the surface of the water. The best place to catch warmouths is shallow water around trees, stumps or vegetation.

Eating Quality - The warmouth has little food value, although they are good to eat when caught from clean water. Like other panfish, they are small and bony. The flesh is usually prepared by deep-frying after rolling it in seasoned corn-meal.

Records - State and World Records - 2.44 pounds, caught in Guess Lake (Yellow River) in 1985 by Tony Dempsey.

BLUEGILL

Common Names - bream, blue bream, sun perch, blue sunfish, copper-belly, roach. ▷

Description - Bluegills have small mouths and oval-shaped, almost rounded, bodies. Coloration is highly variable with size, sex, spawning, water color, bottom type and amount of cover. In general, they are somewhat lavender and bronze with about six dark bars on their sides. Males tend to have a copper-colored bar over the top of the head behind the eyes. The breast is yellow to orange. Females are generally lighter colored than males. Two distinctive characteristics are the prominent black spot on the rear edge of the gill cover and a black spot at the base of the back of the dorsal fin.

Subspecies - Two are recognized: the northern bluegill, found in northwest Florida and the Florida bluegill, found throughout Florida except the panhandle. The bluegill also hybridizes with other members of the sunfish family.

Range - Found throughout Florida and the United States because of widespread stocking.

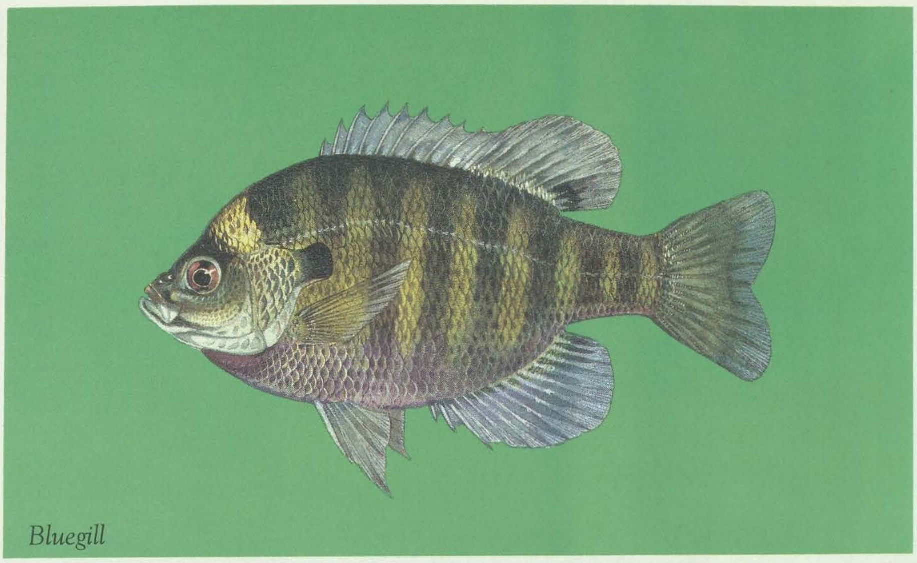
Habitat - Bluegills prefer quiet, weedy waters where they can hide and feed. They inhabit lakes, ponds and slow-flowing rivers and streams with sand, mud or gravel bottoms near aquatic vegetation.

Spawning Habits - Bluegills are well known for "bedding" in large groups, with their circular beds touching one another. Bedding occurs over sand, gravel or mud in two to six feet of water. Spawning occurs from April through October and peaks in May and June. A female may lay 2,000 to 63,000 eggs, which hatch 30 to 35 hours after fertilization.

Feeding Habits - Insects, insect larvae and crustaceans are the dominant foods of bluegills. Vegetation, fish eggs, small fish, mollusks and snails are of secondary importance, although they may dominate their diet during certain times of the year.

Age and Growth - Growth is rapid in Florida. A 1-year-old fish may be 4 inches long. Spawning may occur the first year. Bluegills can live up to 11 years. The rate of growth varies considerably in different bodies of water.

Sporting Qualities - The bluegill willingly takes a variety of natural baits and artificial lures during the entire year. Because of its gameness when hooked and its excellent flavor, the bluegill is one of the more important sport fish in Florida and the eastern United States.



Bluegill

Eating Quality - Excellent; the flesh is white, flaky, firm and sweet. They are generally rolled in cornmeal or dipped in pancake batter before frying. Many rank the bluegill as the most delicious of all freshwater fish.

Records - World Record - 4.75 pounds, caught in Ketona Lake, Alabama in 1950. State Record - 2.95 pounds, caught in Crystal Lake, Washington County in 1989 by John LeMaster.

REDEAR SUNFISH

Common Names - shellcracker, bream, stumpknocker, yellow bream.

Description - The redear is similar in shape to the bluegill, but lacks the dark spot at the base of the posterior portion of the dorsal fin. It also has a red or orange border around the "ear" flap. The body coloration is light olive-green to gold, with red or orange flecks on the breast. The body is heavily spotted, with long, pointed pectoral fins. Five to 10 vertical bars are more or less evident on the sides, depending on the size of the fish. Males and females are similar in appearance, although the male is generally more colorful.

Subspecies - There are no recognized subspecies. Known to hybridize with other members of the sunfish family.

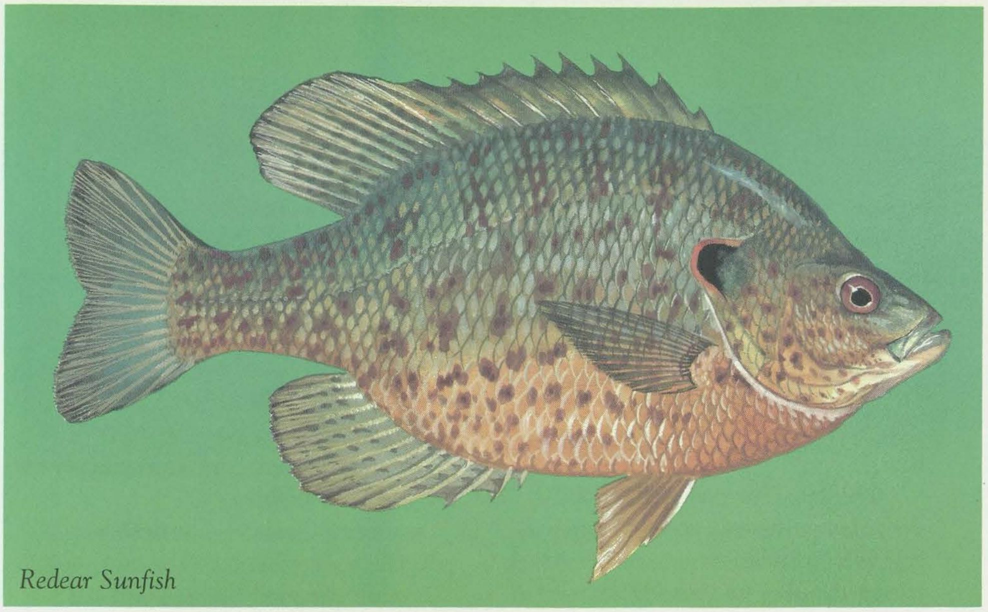
Range - Found throughout Florida. Shellcrackers are also one of the dominant sport fish in the vast marshes of the Everglades.

Habitat - The redear prefers large, quiet waters and has a tendency to congregate around stumps, roots and logs. They are common in lower, more slowly flowing reaches of rivers. Redear tolerate brackish water better than other sunfish, but they are intolerant of cool water and are rarely found in swiftly moving water. Like black bass and spotted sunfish, they may be abundant in tidal areas near the mouths of rivers.

Spawning Habits - Spawning occurs during May, June and July (March through August in central Florida). They prefer water 3 to 4 feet deep and a firm, shelly bottom. Nesting sites are often near aquatic vegetation such as water lilies, cattails, lizardtails and maidencane. Breeding behavior is similar to that of other sunfish, with the males doing the nest-building and guarding the young. A female may lay between 15,000 and 30,000 eggs during a spawn.

Feeding Habits - Redears are opportunistic bottom feeders, foraging mainly during daylight hours on a variety of invertebrates. Important food items include snails and clams, which they crush with grinding teeth located in their throat — hence the name "shellcracker." They also feed on larval insects, fish eggs, small fish and crustaceans. In some areas snails may be secondary to insects as a food preference.

Age and Growth - Redears grow faster than any other true sunfish. The maximum age is about 8 years old. Nine-



Redear Sunfish

to 10-inch redears are common throughout Florida.

Sporting Quality - Strong fighters, but more difficult to catch than most other sunfish. The redear does not readily take artificial lures but easily succumbs to natural baits. Most fish are taken on cane poles with small hooks, corks and split shot for weight. Favorite baits are crickets, grubs, shrimp and worms, fished during the bedding season in spring and summer. Later in the season they move to much deeper water or into heavy cover, where they are difficult to locate.

Eating Quality - Similar to that of bluegill, with white, flaky, sweet-tasting meat. Prepared the same as bluegill.

Records - State and World Records - 4.86 pounds, caught in Merritt's Mill Pond in 1986 by Joey Floyd.

REDBREAST SUNFISH

Common Names - redbelly, robin, yellowbelly sunfish, bream, river bream, longear sunfish, sun perch and redbreast bream.

Description - The redbreast is one of the brightest colored sunfishes. Males have a yellow, orange or red breast, olive upper sides, blending into blue-tinged bronze on the lower sides and blue streaks on the cheek. Females are less colorful; their breasts are yellowish or pale red. The most distinguishing characteristic of this species is a long, narrow (no wider than the eye) extension of the gill cover. These entirely black flaps may reach a length of 1 inch or more.

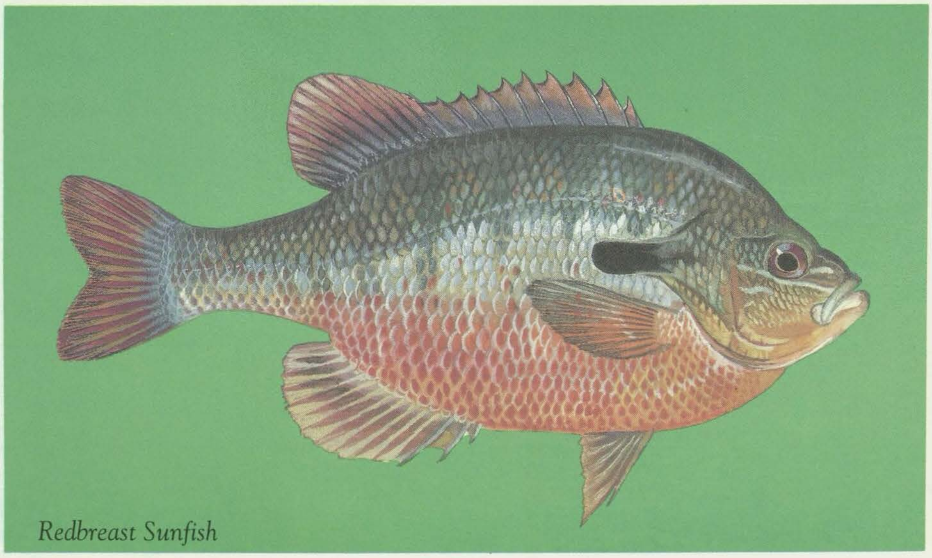
Subspecies - There are no recognized subspecies. They are known to hybridize with other members of the sunfish family.

Range - The redbreast is found throughout northern Florida. It is the most dominant sunfish in the Oklawaha, Ochlockonee, Suwannee and Santa Fe rivers. This species has been introduced into the Blackwater and Yellow rivers in northwestern Florida.

Habitat - Redbreasts inhabit sand-bottom areas as well as rocky areas of coastal-plain streams, rivers and lakes. They frequently concentrate around boulders, limestone outcroppings, logs, aquatic vegetation or in undercut tree roots.

Spawning Habits - They reproduce in typical sunfish fashion by constructing circular beds in one to three feet of water, usually adjacent to objects such as stumps and snags. They often occupy beds that have been abandoned by other sunfishes. Spawning occurs from May through August. Males are the nest-builders and guard the eggs and larvae for a short period after hatching. The number of eggs laid in a season ranges from about 1,000 to 10,000, varying with the age and size of the female.

Feeding Habits - The redbreast's diet is probably the most varied of any of the ▷



Redbreast Sunfish

sunfishes. Principal food organisms are bottom-dwelling insect larvae, snails, clams, shrimp, crayfish and small fish.

Age and Growth - Compared to most other sunfish, redbreasts grow slowly. They seldom live beyond seven years and commonly reach a length of 6 inches.

Sporting Qualities - Redbreasts are prized game and are caught on natural baits and artificial lures. Good fighters, they will bite on flies and small spinners, as well as worms, crickets, grasshoppers and small minnows. Unlike most sunfishes, redbreasts bite well at night. Fishing from a drifting or slowly powered boat is the best way to catch redbreasts, although angling from the bank can be productive.

Eating Quality - The sweet, flaky, white flesh is excellent eating. They are most often fried after dipping in seasoned cornmeal or pancake batter.

Records - World Record - 1.75 pounds, caught in the Suwannee River in 1984. State Record - 2.08 pounds, caught in the Suwannee River in 1988 by Jerrel DeWees Jr. The state-record holder has not applied to the International Game Fish Association for world record status.

SPOTTED SUNFISH

Common Names - stumpknocker, bream.

Description - Spotted sunfish tend to be olive-green to brown in color. Black or reddish spots on the base of each scale form rows of dots on its sides. On some fish there is a red bar in front of many of the black spots, particularly below the lateral line. These bars give the fish a reddish hue. Body shape is thick and ovate, with the length about twice the depth. Some fish have blue on the lower portion of the eye.

Subspecies - Two are recognized: one is found from North Carolina to Florida; another is found in Mississippi and in Gulf Coast drainages. Intergrades are found in northwest Florida.

Range - It is found throughout the Florida peninsula and west to the Perdido River.

Habitat - The preferred habitat is slow-moving, heavily vegetated streams and rivers with limestone, sand or gravel substrates. They are virtually ubiquitous, inhabiting large rivers to very small creeks.

Spawning Habits - A nest-building sunfish, this species tends to be more solitary than some other members of the sunfish family. Males are very aggressive and antagonistic toward other fish in the nesting area. The beds are about 1 foot in diameter and are fanned out by the male, who also stands guard over the eggs and larvae. Concentrations of beds are found where suitable habitat is limited. Spawning takes place from May through November.

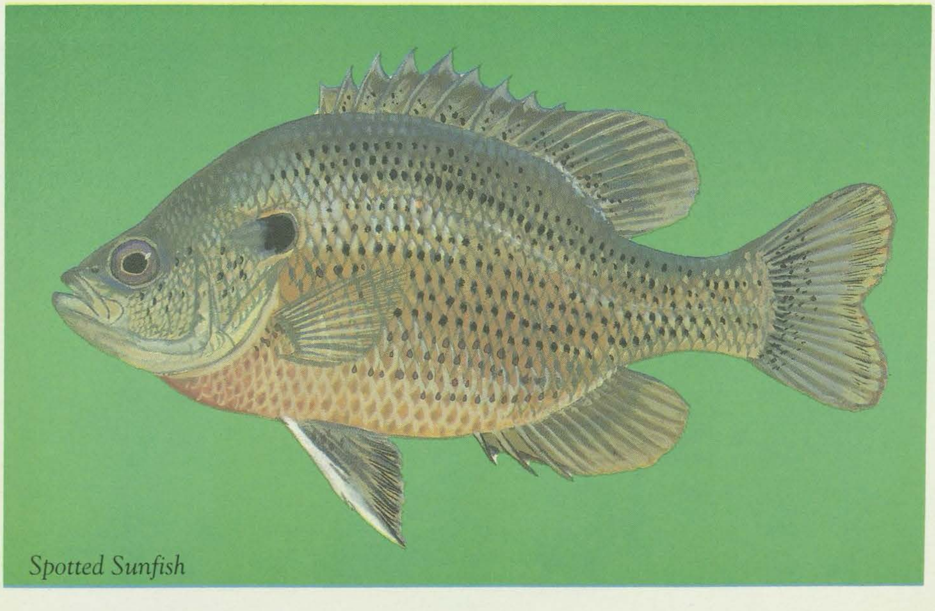
Feeding Habits - This species is very aggressive and will take almost anything they can attack and catch. They generally feed on the bottom, but sometimes will rise to the surface to take food. Spotted sunfish will feed on invertebrates, insects and small fishes when they are easy to catch. The bulk of their diet consists of a variety of plants and animals that are usually associated with aquatic vegetation, brush or rubble.

Age and Growth - Very little information is available on age and growth. A 4-year-old fish averages about 6 inches long.

Sporting Qualities - Because of its small size, the spotted sunfish has limited value to the angler but is an active and feisty panfish. The same methods of fishing for the redbreast sunfish apply for the spotted sunfish.

Eating Quality - The flesh is excellent. Preparation is the same as for the redbreast sunfish.

Records - World Record - None. State Record - 0.83 pounds, caught in the Suwannee River in 1984 by Coy Dotson.



Spotted Sunfish

FLIER

Common Names - round sunfish, millpond flier.

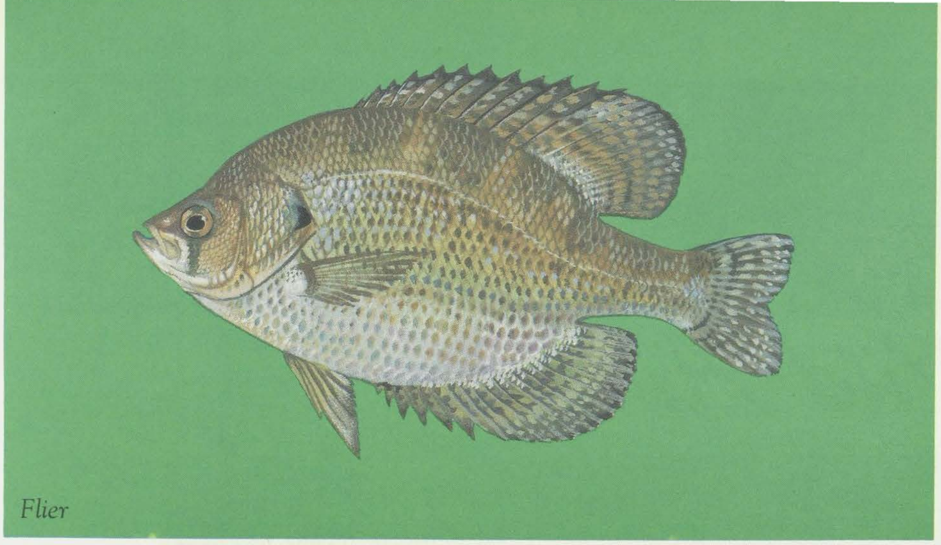
Description - The flier is a small sunfish with a strongly compressed, deep, round body and small mouth. The coloration is greenish or silver green to brown on back and sides with a cream or yellowish belly. A brown dot on each scale gives the appearance of numerous rows of dots. Young fish have a large, black spot surrounded by bright orange in the soft rays of the dorsal fin. A dark, vertical streak is present below the eye and extends to the lower edge of the gill cover. The dorsal and anal fins are nearly symmetrical.

Subspecies - There are no recognized subspecies. Has been known to hybridize with other sunfish.

Range - Fliers range from north to central Florida.

Habitat - They inhabit dark, acidic waters of coastal swamps, creeks, ponds and canals. They prefer heavily vegetated water and are often found under mats of floating vegetation. Fliers can tolerate waters too acidic for other sunfish. They prefer water temperatures from 75 to 85 degrees.

Spawning Habits - Spawning begins in March. The male prepares a nest, and the female lays from 5,000 to 50,000 eggs. Nesting may be solitary or in small



Flier

colonies. Males continuously guard the eggs and recently hatched young.

Feeding Habits - Fliers are carnivorous in their feeding habits. They prefer insects, crustaceans, mollusks, worms, leeches and small fish, supplemented with small quantities of phytoplankton.

Age and Growth - Fliers live as long as eight years but grow very slowly. They may attain a maximum length of about 10 inches and a weight of 1 pound, although most are much smaller. There is no apparent difference in size or rate of growth between males and females.

Sporting Qualities - Although fliers fight well for their size, they are often too small to generate much interest among anglers. Fliers can be caught on dry flies, tiny poppers, worms, insect larvae and small minnows. Good fishing locations are around cypress trees and stumps, near brush piles and at the mouths of small creeks and canals.

Eating Qualities - The flesh is sweet and excellent to eat. The same methods of cooking other sunfish apply for fliers.

Records - World Record - None. State Record - 1.24 pounds, caught in Lake Iamonia in 1992 by William C. Lane Jr.

BLACK CRAPPIE

Common Names - speckled perch, speck, papermouth, bachelor perch, calico bass, strawberry bass, white perch.

Description - The black crappie is a silvery-green to yellowish fish with large dorsal and anal fins of almost identical shape and size. The sides are marked with black blotches, which become more intense toward the back. The dorsal, anal and caudal fins also are marked with rows of dark spots. Crappies have compressed bodies, small heads and arched backs. They have a large mouth with the upper jaw extending under the eye.

Subspecies - There are no recognized subspecies. They are closely related to the white crappie found in Alabama and Georgia. The white crappie, however, is not found in Florida.

Range - Found statewide except in the Florida Keys.

Habitat - Black crappies thrive in clear, natural lakes and reservoirs with moderate vegetation. They also are found in large, slow-moving, less turbid rivers, provided the water is not too murky. Crappies prefer water from 70 to 75 degrees but will tolerate water over 80 degrees. They are gregarious and often travel in schools.

Spawning Habits - Spawning occurs from February to April. They nest in colonies. Circular nests are fanned by males over gravel or soft, muddy bottoms and frequently around submerged vegetation in waters from 3 to 8 feet deep. After spawning, males guard the eggs and fry. Females may produce between 11,000 and 188,000 eggs.

Feeding Habits - Primary food items are crustaceans, aquatic insects and small fishes. Adults mainly eat small fish, particularly open-water forage fish.

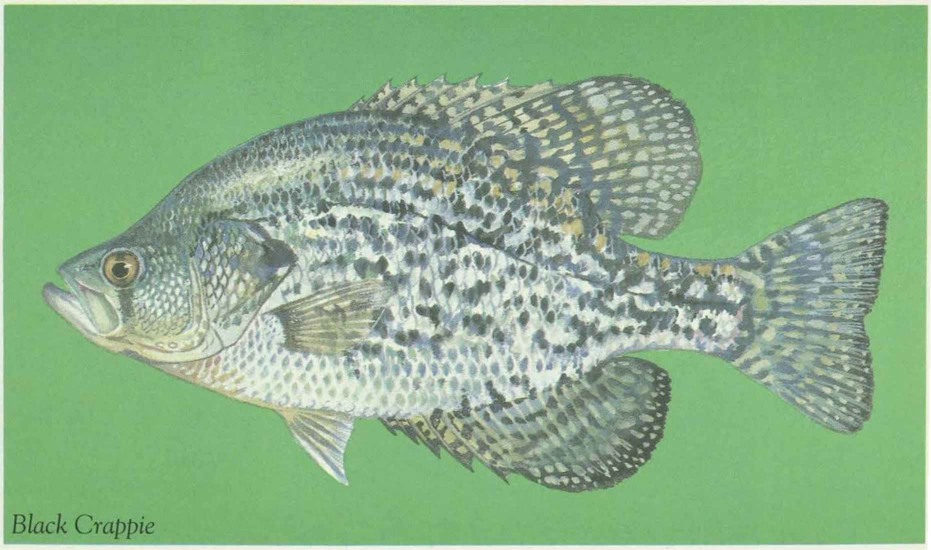
Age and Growth - Sexual maturity is reached in the second or third year, with few fish surviving beyond their fifth year in Florida waters.

Sporting Quality - Black crappies are excellent game fish, highly regarded by bait fishermen and artificial-lure anglers alike. They are easily caught during prespawning periods when the fish congregate in large schools. Trolling with small, live minnows or a spinner-fly combination is very productive. They will also strike subsurface flies, small spinners, jigs and tiny crankbaits. Crappies tend to suspend in mid-water, so you may have to experiment to find the right depth.

Eating Quality - Excellent. The meat is prepared by rolling in cornmeal or dipping in pancake batter and deep frying.

Records - World Record - 4.50 pounds, caught in Kerr Lake, Virginia in 1981. State Record - 3.83 pounds, caught in Lake Talquin in 1992 by Ben F. Curry Sr.

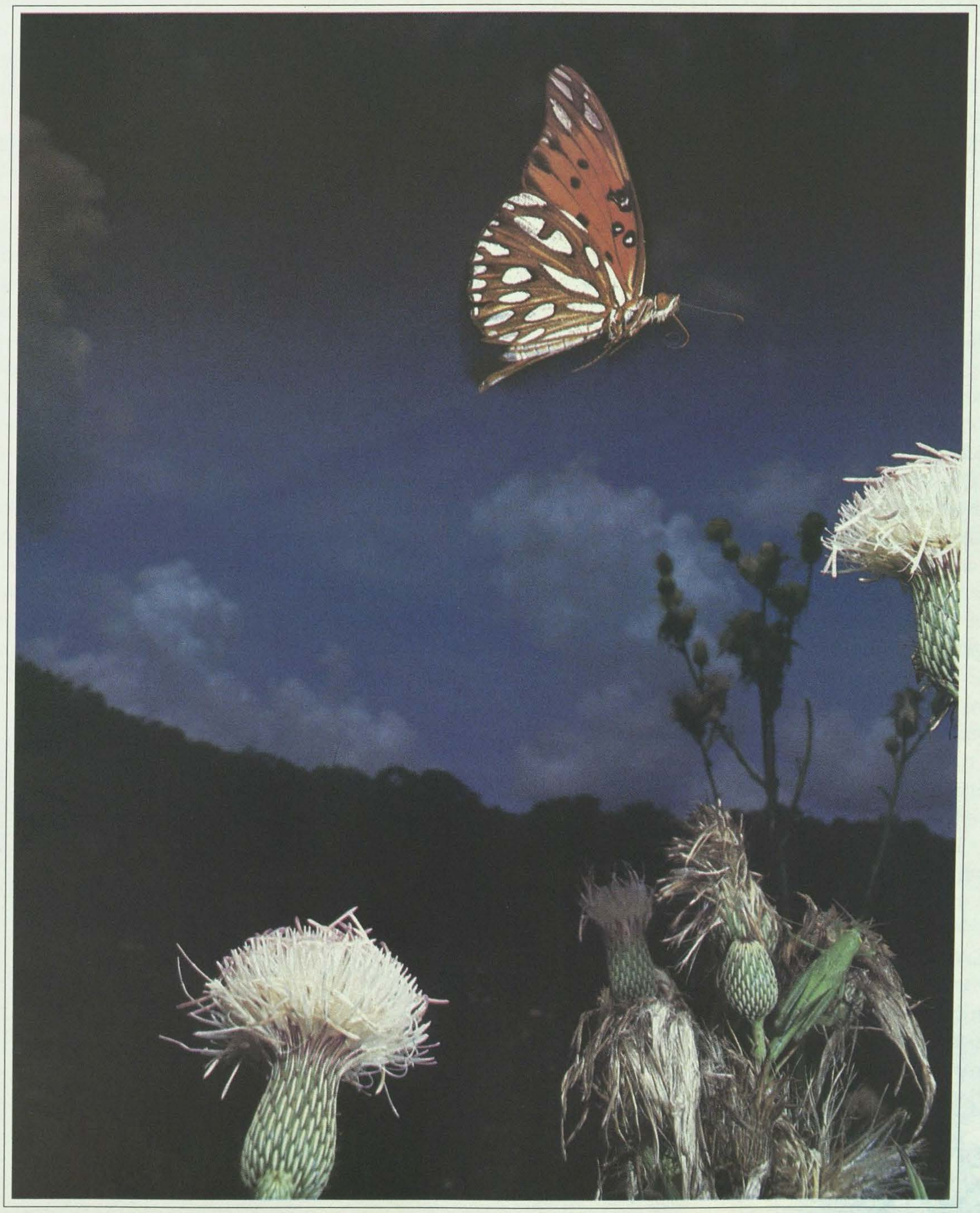
Mark A. Trainor is a public information specialist in the Commission's Tallahassee office.



Black Crappie

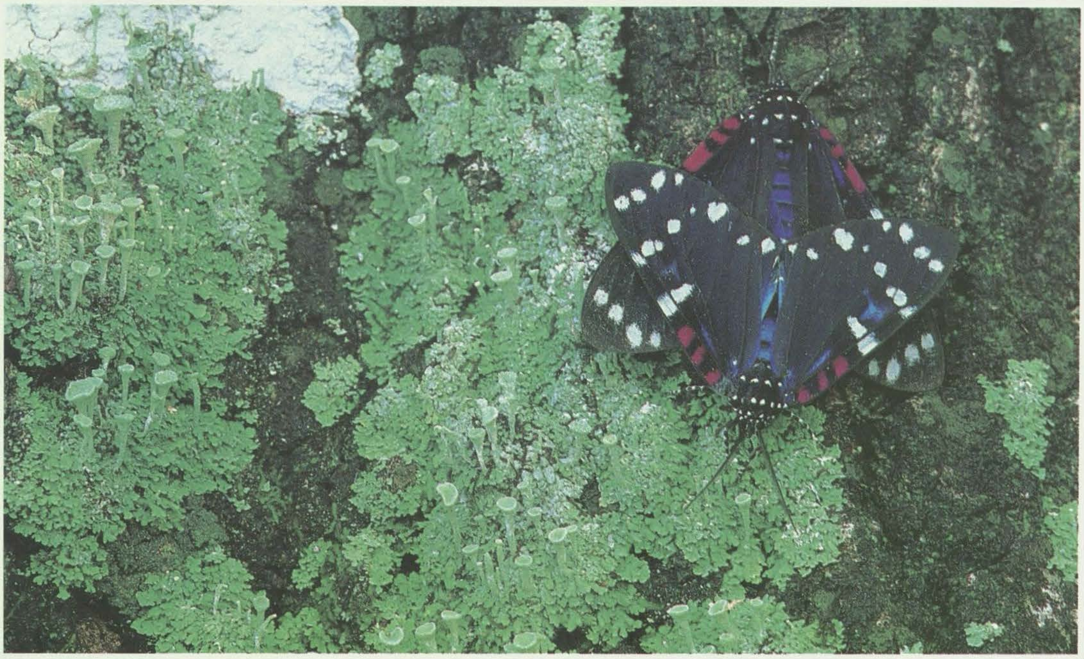
1992 Photo Contest Winners

Other Wild Animals



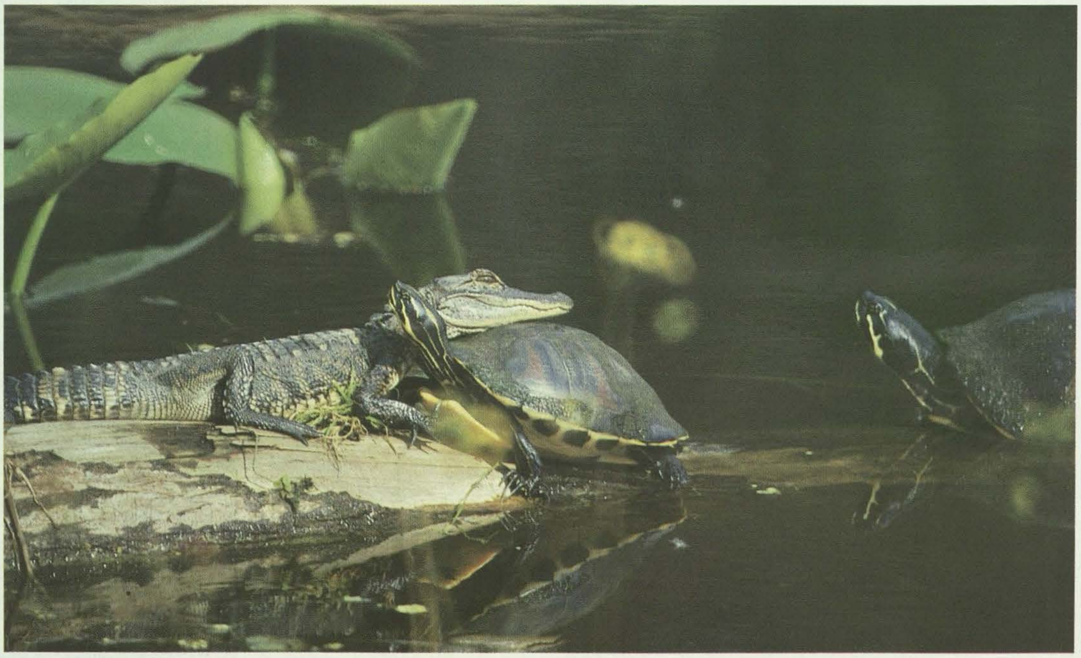
FIRST PLACE: *FLYING FRITILLARY by Jim Phillips*

1992 Photo Contest Winners



SECOND PLACE: FAITHFUL BEAUTY MOTHS *by Kevin Barry*

THIRD PLACE: ALLIGATOR AND TURTLE ON LOG *by Aileen R. Lotz*



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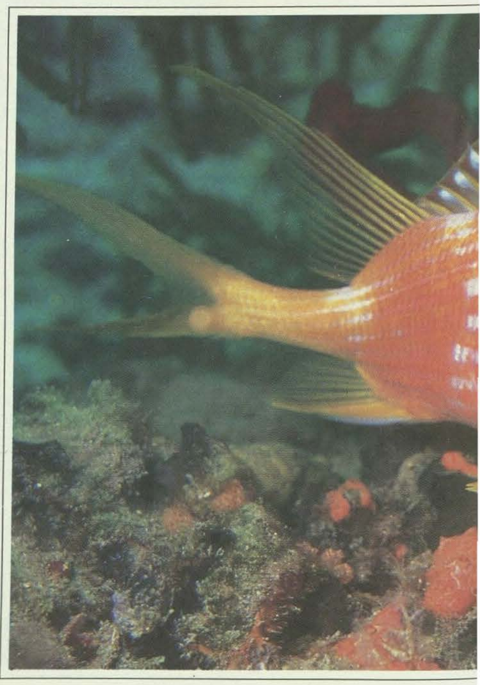
1992 Photo Contest Winners

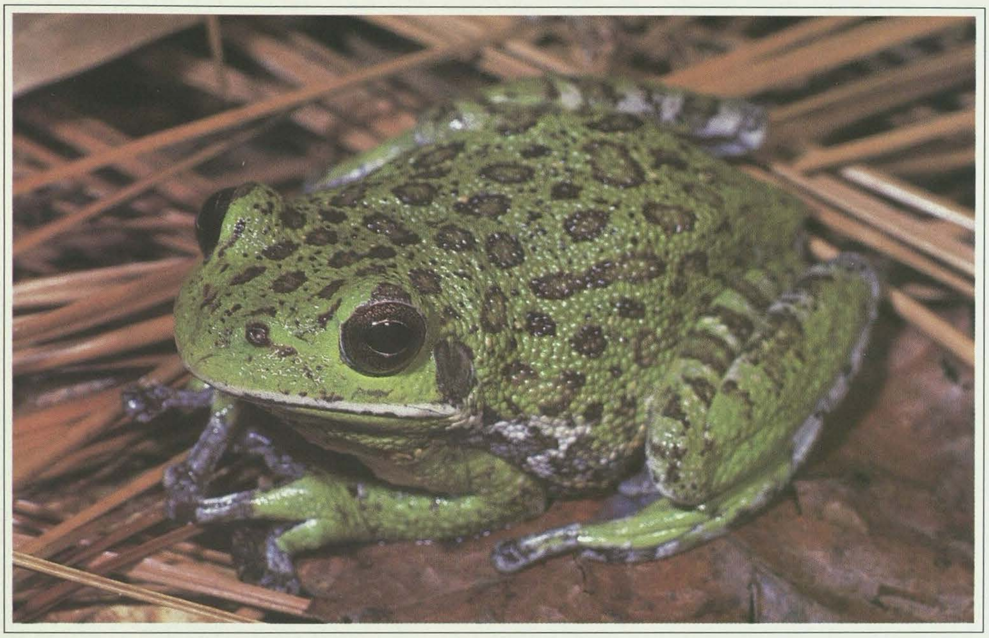
HONORABLE MENTION: *AMERICAN CROCODILE by Mark J. Thomas*

HONORABLE MENTION:
GRAY TREE FROG
by Barry Mansell

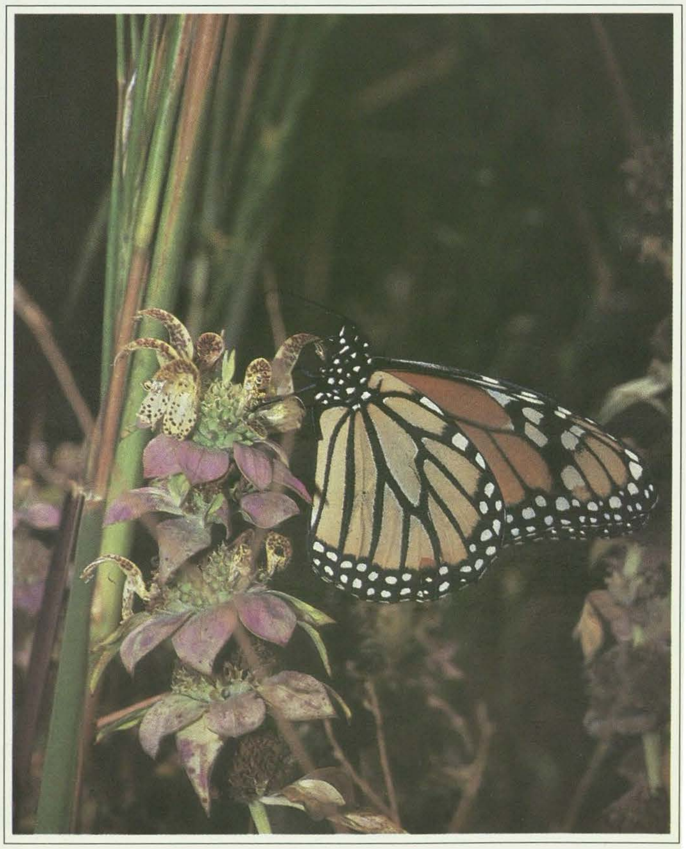


HONORABLE MENTION:
SQUIRRELFISH
by Mark J. Thomas

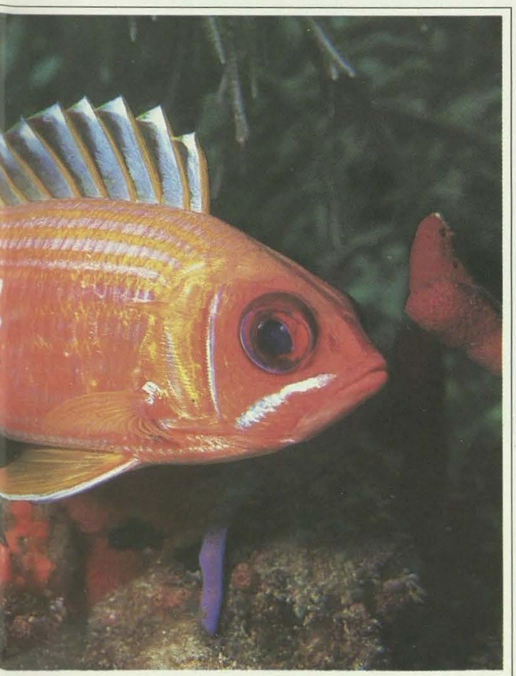
1992 Photo Contest Winners



HONORABLE MENTION: BARKING TREE FROG *by John Palis*

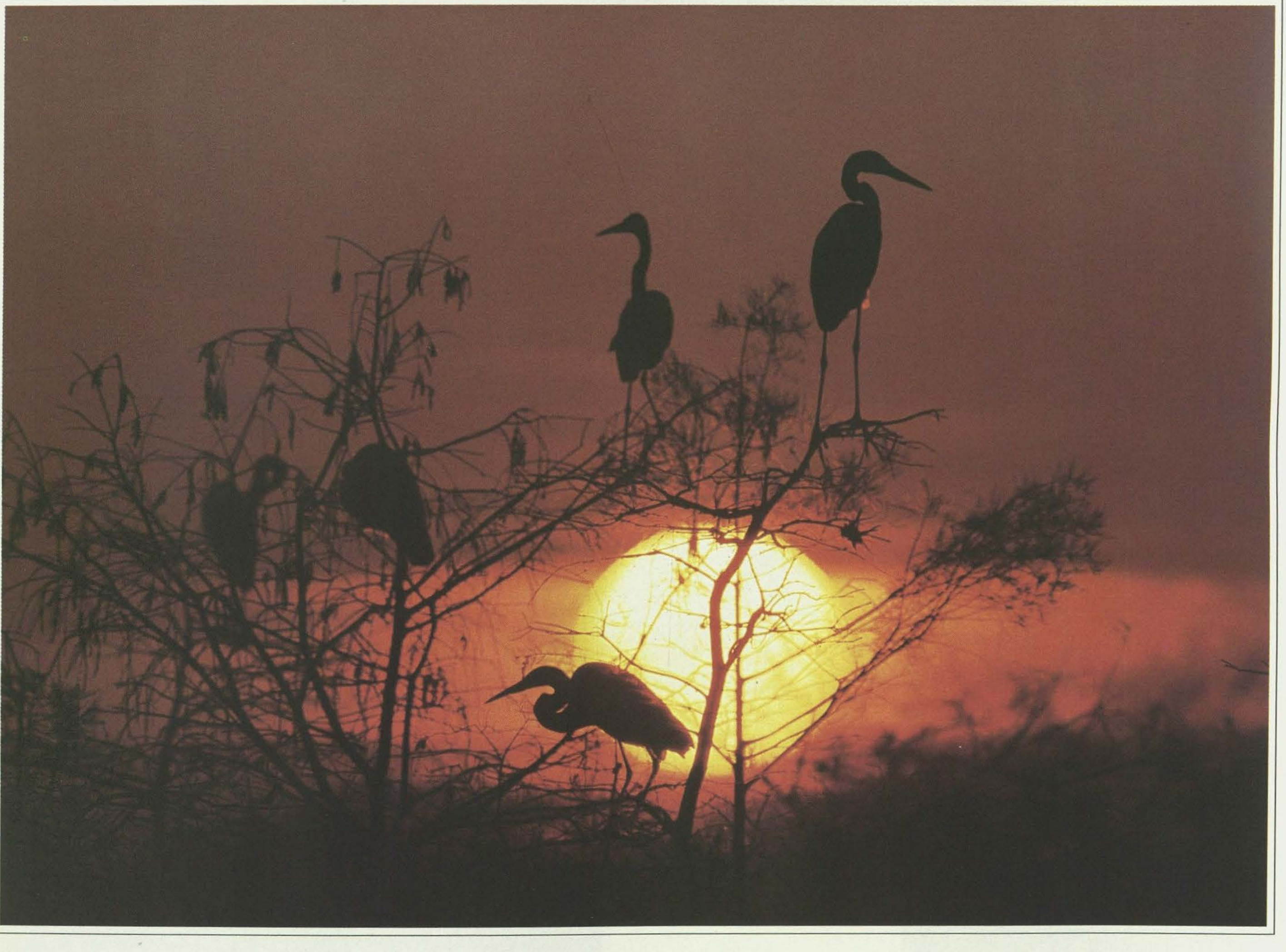


HONORABLE MENTION:
MONARCH BUTTERFLY
ON DOTTED HOUSE MINT
by Pat Donnelly



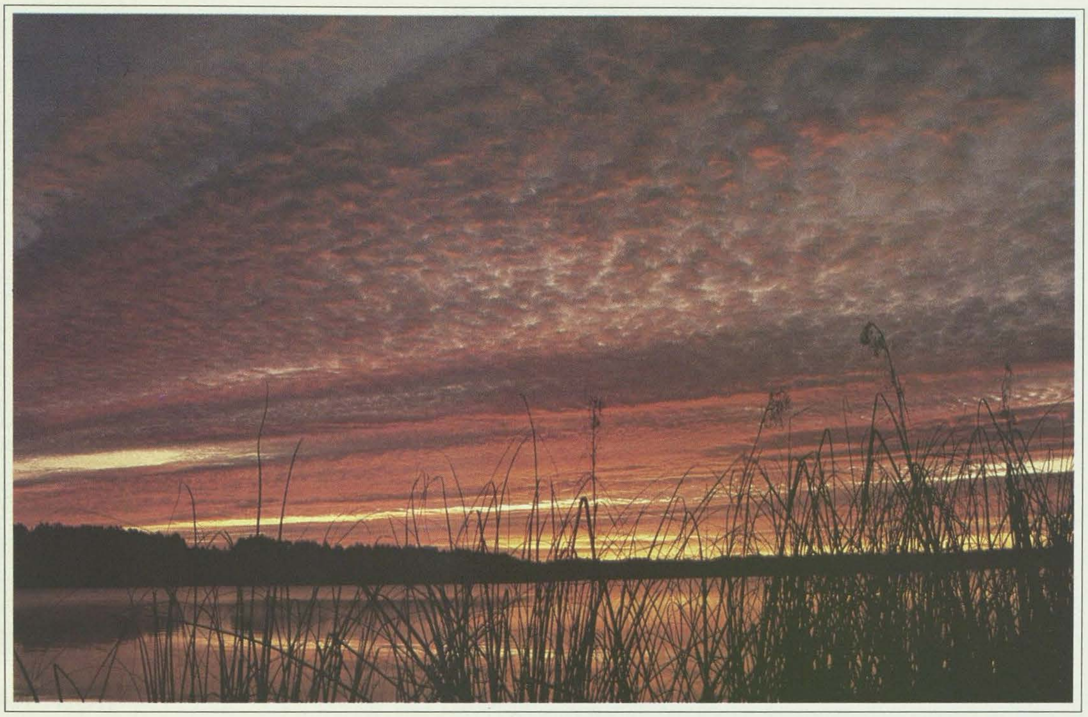
1992 Photo Contest Winners

Florida's Natural Environment

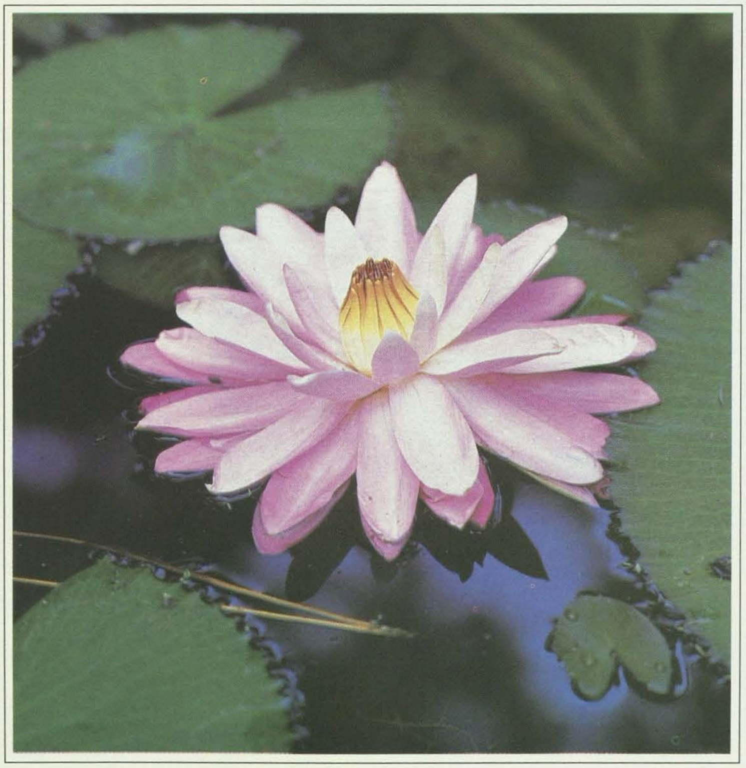


FIRST PLACE: *BIG CYPRESS NATIONAL PRESERVE by Bob Evans Jr.*

1992 Photo Contest Winners



SECOND PLACE: *SUNRISE ON STAR LAKE by Ruthe J. Smith*



THIRD PLACE TIED:
WATER LILY by Jim Phillips

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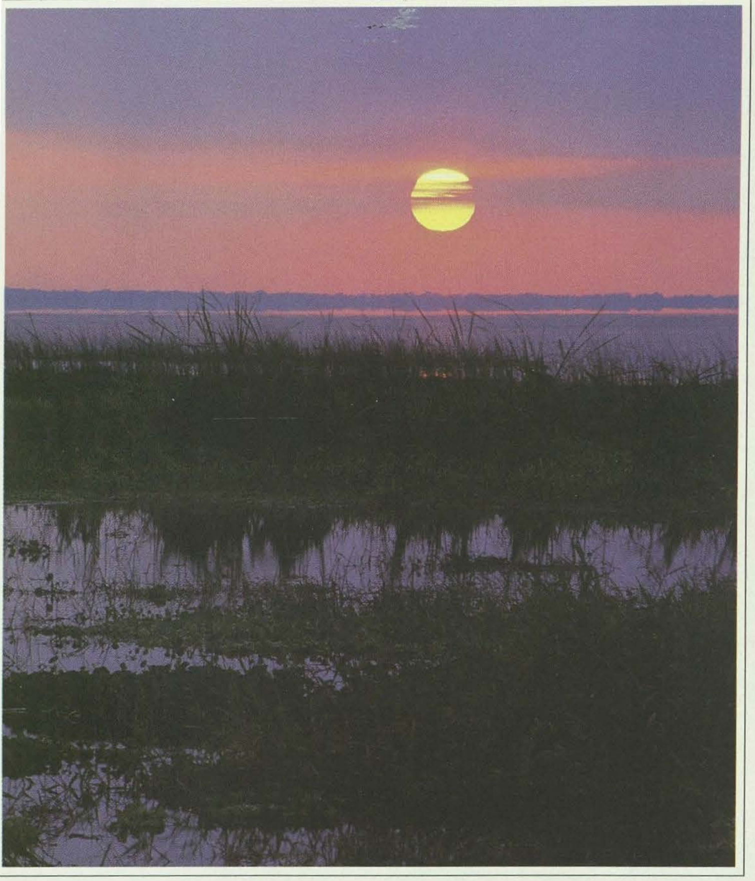
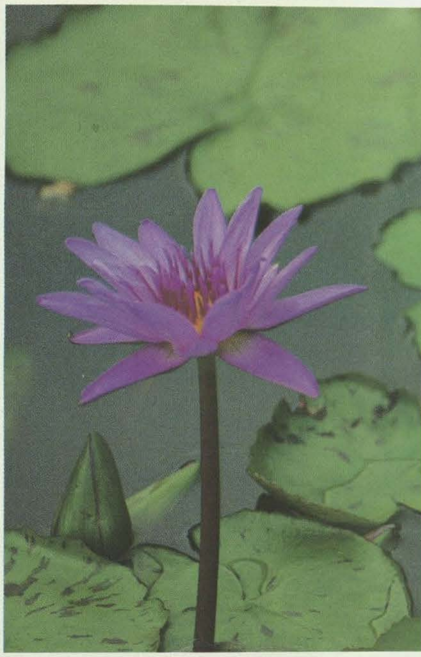
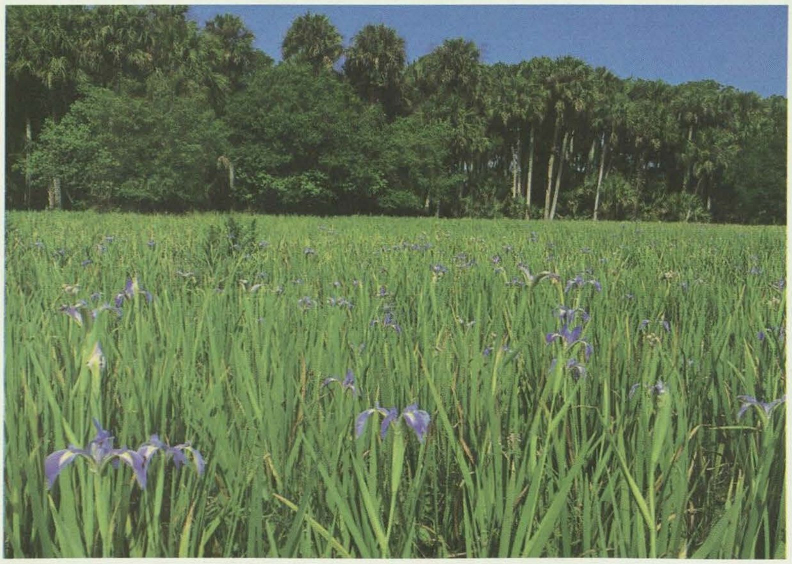
1992 Photo Contest Winners



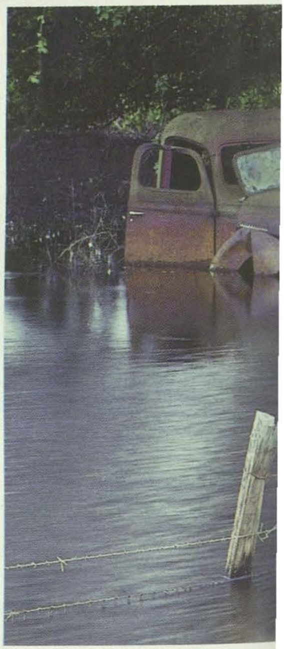
THIRD PLACE TIED: *SUNRISE ON LAKE OKEECHOBEE by Chica Stracener*



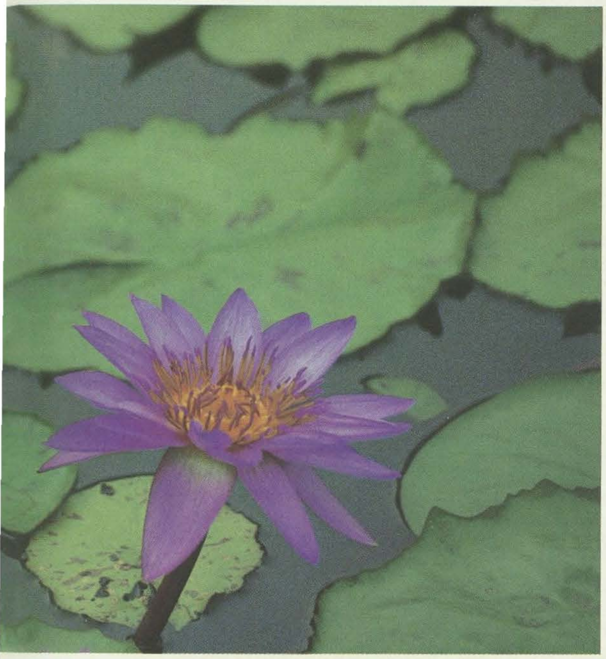
HONORABLE MENTION:
WATER LILIES by Marian Herz



HONORABLE MENTION:
HAMMOCK by Chica Stracener



1992 Photo Contest Winners



HONORABLE MENTION:
Trumpet Plants by John Palis

HONORABLE MENTION: *POND AND TRUCK*
by John Nugent

HONORABLE MENTION: *REFLECTION*
by Ruthe J. Smith

1992 Cover Art Winner

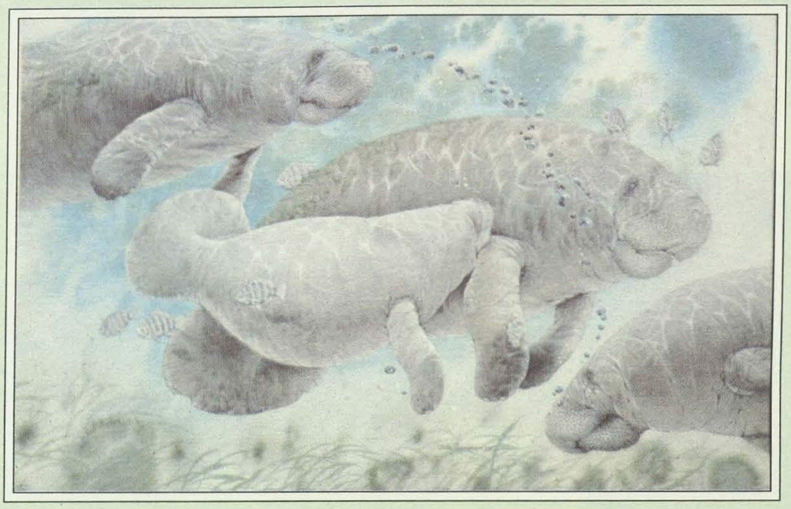


Image size: 17" wide by 11.5" high. Limited edition of 1,000 signed and numbered prints.

Linda Thompson's watercolor painting won the 1992 FLORIDA WILDLIFE Magazine Cover Art Contest.

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Update

Wood Duck Nest Box Program

By Diane Roth Eggeman

March 11, 1992, 8:30 a.m.: I tell my partner I'm glad we got an early start this morning. It seems like every wood duck box has a nest, and we'll need most of the day to finish checking them. March mornings are my favorite time to do this because temperatures are comfortable and nesting activity is at a peak. These monthly nesting inspections occur February through August.

As we systematically work our way around Lake Miccosukee, near Tallahassee, we record what's going on in each of the lake's 90 wood duck nest boxes. As we approach, we quickly block the entrance hole to the box so that if there is an incubating wood duck hen inside, she won't escape. Stepping up high enough to see inside box number 3142, I lift the lid just a bit and make sure that no wasps are lurking on the inside of the lid. Just as I look down to the bottom of the box, the duck starts to scramble. I shut the lid to let her settle down.

My partner and I give each other the look that says, "She'd better not escape." It's embarrassing to be outsmarted by a duck. Once she's still, I quickly raise the lid, try to keep my balance, reach down and grab the bird across the back. The biologist wins this time, only to be greeted by scratching claws.

After lifting her from the box, we see we won't need to put an identifying leg band on this hen. She already has one, number 885-16043. The band number is only one of many blanks to fill on the data sheet for this box. We record the bird's band number and double-check to make sure we recorded it correctly. I step back up to the box, count 11 eggs in the nest and note that the hen has added down feathers to the nesting material. As my partner records these facts on the data sheet, I cover the eggs with the down and shut the lid. We ease the hen back through the box's entrance hole and cover it again so that she cannot immediately leave. After the bird settles back down, I uncover the hole and push the boat away from the box. Most of the time, after this rude interruption by biologists, the female immediately resumes incubating her nest. After 28-30 days of incubation, she hatches a brood of ducklings.

Back at the office, after reviewing the day's data from Lake Miccosukee, I look up band number 885-16043 along with the other recaptures. We banded this female as an adult in Gadsden County in September 1988. We have recaptured her nesting on Lake Miccosukee each year since 1990. In both 1991 and 1992, she successfully hatched two nests. This female is at least 5 years old and has become a productive nester.

The Commission's statewide wood duck nest box program is providing similar survival and reproductive histories

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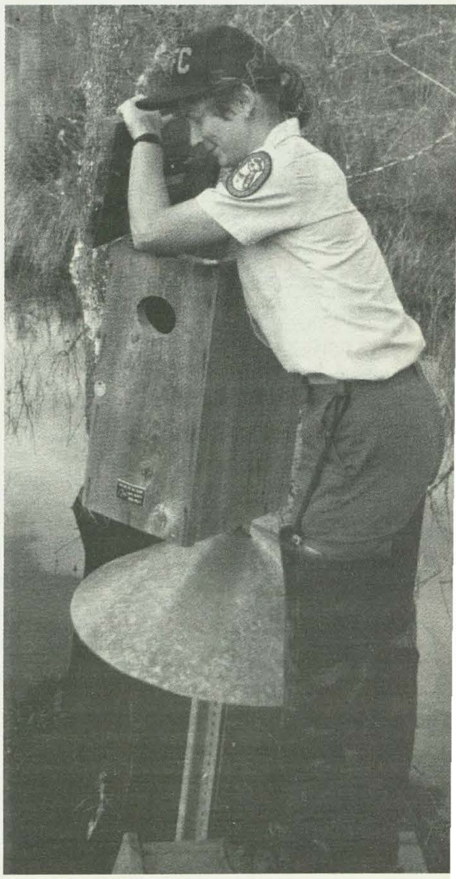

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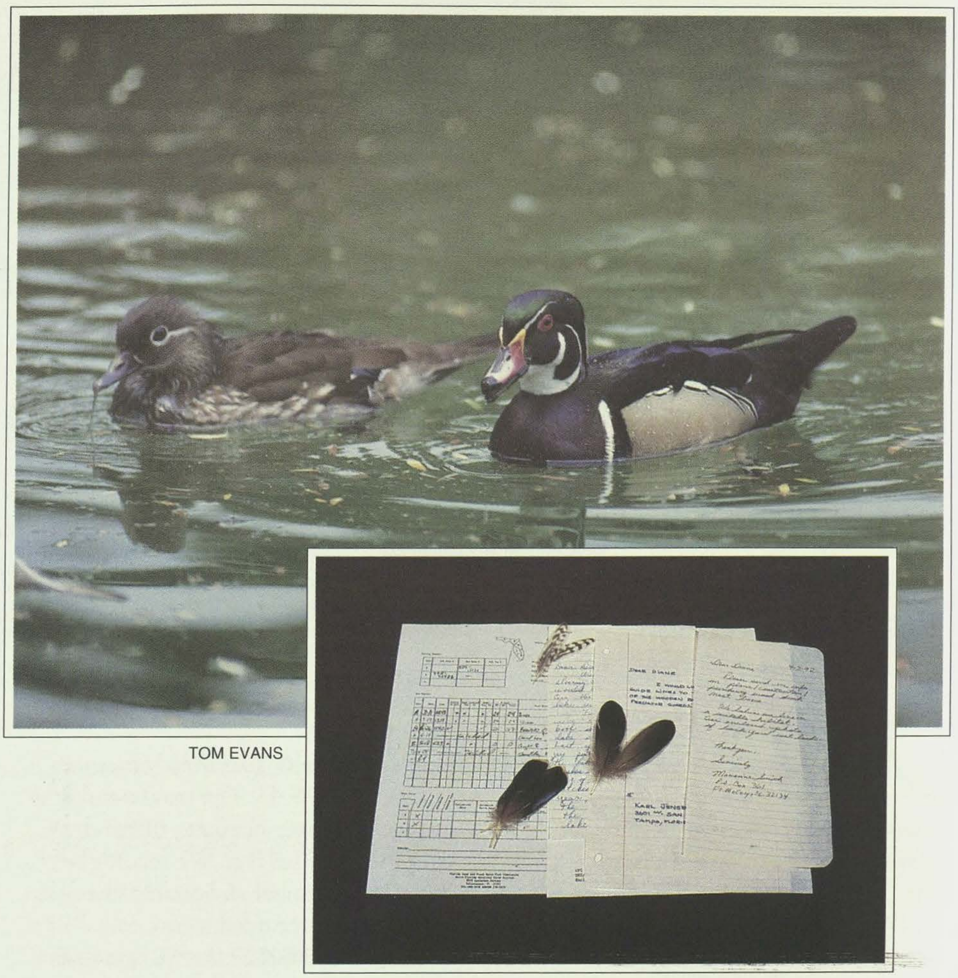
For six months each year, Diane Roth Eggeman and other scientists inspect some 1,000 boxes for wood duck nesting success.

on hundreds of female wood ducks throughout the state. Our federal banding permit gives us legal authorization to capture and band these waterfowl.

I am one of the biologists with the Commission's Waterfowl Management Section coordinating the statewide wood duck nest box program. Commission staff and cooperators from several other agencies or organizations regularly monitor approximately 1,000 nest boxes throughout the state between February and August each year. This program, described in the January-February 1992 issue of FLORIDA WILDLIFE, provides Commission biologists with information on the status and trends of Florida's resident wood duck population. We need this information to base decisions about managing this species through hunting regulations and habitat conservation.

In most cases, monitoring animal populations requires long-term study, and the wood duck nest box program is no exception. Waterfowl biologists are busy compiling the fourth year of data from this program. One objective is to estimate survival of adult females by capturing and banding them while they incubate nests. Recapturing marked females in subsequent years allows us to estimate their probability of survival. We must acquire at least three or four years of data before we can begin to estimate survival of nesting adult females. Waterfowl biologists will be analyzing data this year to produce the first survival estimates from the nest box program.

We also plan to study rates of nest box usage as a long-term indicator of change in the breeding population size. We hope to determine whether the population has increased, decreased or remained stable over a seven- to 10-year period. So, at best, we are halfway down the road toward determining the status of Florida's wood ducks. While this long-term information is accumulating, the nest boxes continue to provide high-quality nesting sites for this popular and important part of Florida's wildlife.



TOM EVANS

WILLIAM A. GREER

It's Maintenance Time

If you already have placed wood duck nest boxes, please remember that annual maintenance is necessary. Examine your boxes in December or January to make sure they are in good repair and ready for the upcoming nesting season. Wood ducks start nesting as early as late January.

Your boxes need four to six inches of nesting material (wood shavings) in the bottom because wood ducks usually do not bring material to the nest. Shavings should be from untreated wood. Cabinet makers or shops that make moldings are good sources for wood shavings. Sawdust alone or mixed with shavings is less desirable because it tends to hold moisture and become compact. If you cannot get shavings, untreated sawdust will do. In addition to replenishing the shavings, remove any remains of last year's nests, including hatched and unhatched eggs and down feathers.

Occasionally, you may need to dump out everything inside the box and replace the nesting material, particularly when it becomes badly matted, soiled, or infested with fire ants and other insects. Eradicate wasps, which find wood duck boxes attractive places to nest. This is much easier (but not nearly as exciting) on a cool day when the wasps are sluggish. Avoid applying wasp spray or other contaminating chemicals inside the box, especially on the nesting material.

Nest boxes also occasionally need repair of split lids, loose hinges, latches or pulled nails. Make sure that the hardware-cloth ladder on the inside front of the box is in place and has no protruding wires. A staple-gun and wire cutters are handy for this task. If your nest box doesn't have a predator guard, now is a good time to install one.

Keeping and maintaining a wood duck nest box is an easy way to provide this colorful species a place to breed and rear its young. You'll find hours of enjoyment watching the ducks make use of their home and great satisfaction in doing a good deed for wildlife.

Diane Roth Eggeman is a waterfowl biologist with the Commission's North Florida Waterfowl Field Station in Tallahassee.

Wood Duck Fans Flock to the Rescue

Readers respond to FLORIDA WILDLIFE's Nest Box Program article

Last fall, when Commission biologist Diane Eggeman told us she was swamped with requests for information on wood duck nest box construction plans, we expected to see 25-30 letters.

But, upon examining an overflowing file folder, I was surprised to learn that the Waterfowl Field Station received over 100 letters because of an article that appeared in the January-February 1992 issue of FLORIDA WILDLIFE. That's the largest response to any article we've published in years!

The bulky correspondence file was brimming with requests for information, interesting wildlife observations, offers to construct nest boxes and praise for the nest box program and for our magazine.

Letters came from all over — inland, coastal, north and south....from Thomasville, Ga. to Tampa, Venice, Lake Placid, Orlando, Newberry, Bradenton, Jacksonville, Bushnell and West Palm Beach. Over 100 letters came from about 70 different Florida cities, and about a dozen more from out of state. Duck fans popped up from cities and tiny towns, farmlands, borrow pits, rivers and lakes — all anxious to know what they could do to help Florida's wood duck population.

Most folks asked for construction plans or wanted to know about habitat and food preferences, predator guards and so forth. We heard from hunt clubs, teachers, farmers and other individuals who have enjoyed years of bird-watching and were glad to help this colorful species.

We've selected some excerpts from these interesting letters so that you can see what your fellow readers think about the status of this colorful waterfowl.

—Andrea H. Blount

"So many people seem to have no consideration for our fellow residents on this planet. I think some of us must try to do all we can."

— Bob Pealer, Gainesville

"As a high school construction instructor, I intend to incorporate a project of this nature into our curriculum...to help heighten preservation of nature."

— John L. Petashek, New Port Richey

Another high school shop teacher offered to have his students build nest boxes, while a biology teacher in Tampa offered to monitor boxes as a science project.

"For the past three years a pair of wood ducks nested in an old palm tree that was killed in the 1985 freeze. Last spring the tree was felled by wind, causing the destruction of the nest. I would like to set up a box and predator guard in an area that we leave natural at the lakeshore."

—Jim Dunn, Apopka

"We have a cottage on Lake June in Winter. Last week while fishing in a cove near the public boat ramp, I counted 15 wood ducks feeding in a yard. As we watched, a red-tailed hawk swooped down from an oak and grabbed a hen. She put up a terrific struggle, dragged the hawk about 50 feet to water where it released her and flew off. There seem to be fewer Florida ducks around the lake, but an increase in the wood duck population."

— Albert Seyferth, Rockledge

"I have a farm in Jefferson County. During my 12 years of ownership I have erected approximately 20 wood duck boxes. There appears to be a good population of wood ducks in and around my area. However, to date, I have been unable to note any nesting activity..."

— William P. Brant, Greenville

Mrs. Everett Leedy of Orlando wrote about a persistent wood duck that tried to enter a screech owl box. "The hole was too small, as we had not expected a wood duck, but had placed the house to lure owls."

Manatee Community College wrote that as a designated bird sanctuary with a 10-acre lake, the south campus would be suitable habitat for nest boxes.

"We live on Merritt's Mill Pond in Marianna. On the water we have a small island where we keep shelled corn for the wood ducks. Last year we saw more little ones grow up because of the excellent cover they had with our outgrowth of willows. Late in the afternoon we enjoy watching 15-25 adult wood ducks that come in to eat."

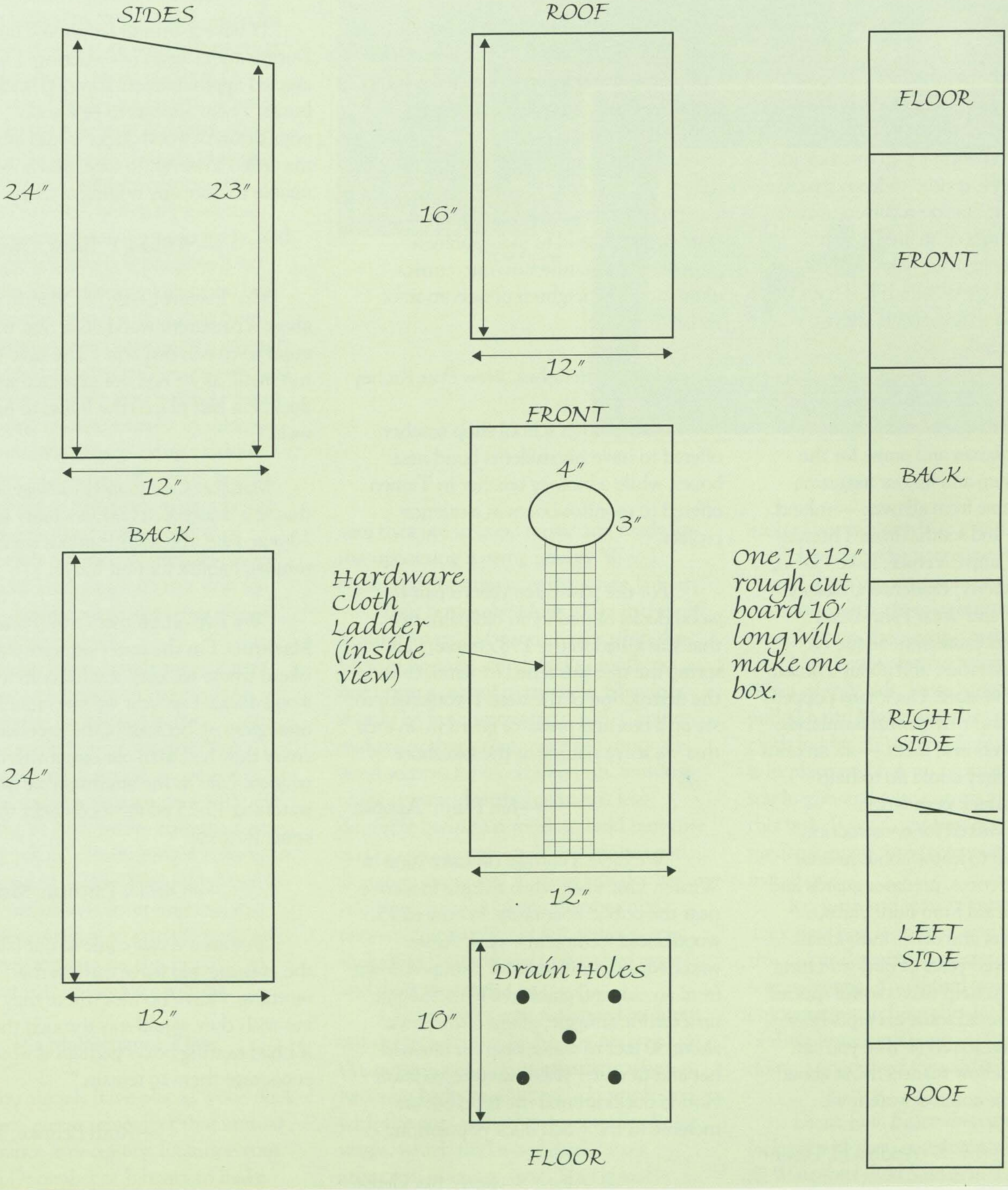
— Otis D. Traynam, Marianna

"I've seen a pair come to our lake in the evening and leave early in the morning. I have no idea where they sleep, but wish they would stay through the day. If I had nesting boxes perhaps it would encourage them to remain."

—Ruth Behnke, Tampa

How To Build A
Wood Duck Box

A wood duck box should be constructed of unplaned cedar, cypress or other weather-resistant lumber. It should NOT be painted, stained or creosoted. As the diagram indicates, the entrance should be oval-shaped with the broadest distance horizontal. On the inside front of the box, beneath the hole, a strip of screen or hardware cloth should be tacked to provide the ducklings a means of escaping the box.



Two Good Bets For A Trophy Buck

By Lt. Stan Kirkland

TOM EVANS

Two areas in Bay County produce bragging-size bucks.

Most deer hunters hunt for years on public lands and rarely see a big-racked buck. The primary reason is that hunting pressure on public lands is such that few bucks live long enough to grow the big antlers we associate with mature bucks. On some areas, habitat and nutrition also may be a problem.

But it's not always the case. Ironically, Bay County is the site of two of the most productive public areas for trophy whitetails: Tyndall Air Force Base Type II Wildlife Management Area (WMA) and Moore's Pasture Unit Type I WMA.

The irony here is not so much that two top big-buck producers are in one county, but that coastal counties, such as Bay, usually have the poorest soils in the state. Generally, poor soils make for less nutritious browse and poor-quality deer. Just the opposite is said for the more fertile, interior counties.

Perhaps what makes the difference on these areas is the combination of adequate-to-good deer habitat and regulations that protect the deer herd, especially bucks, from over-harvest. Maybe you'll take your trophy buck on one of these areas this season.

Tyndall Air Force Base
Type II WMA

Tyndall Air Force Base, located immediately southeast of Panama City, covers 29,000 acres on a peninsula. The base has more than 80 miles of coastline and is surrounded by the Gulf of Mexico, St. Andrews Bay and East Bay.

While the base was originally established in the 1940s as a training center for World War II-bound aviators, and still trains pilots today, hunters are fortunate to have access to 17,000 acres there. As a Type II wildlife management area, Tyndall authorities sell their own hunting permits, and the Game and Fresh Water Fish Commission enforces permit requirements and provides technical assistance.

Wildlife biologist Steve Shea works in the base's natural resources section and oversees the deer management program on three hunt units on Tyndall. They include the 3,000-acre West Unit, 10,000-acre East Unit and a 4,000-acre parcel near the flight line reserved for active duty, retired military and civil service employees of the Department of ▷

Defense. Shea proudly points out that no other public area near its size in Florida has produced as many older and bigger-racked deer over the last several years.

During the 1991-92 season hunters took 166 bucks on Tyndall, 39 of which sported seven-point racks or larger. Three of those scored more than 120 Boone & Crockett points. Hunters killed 98 does as well.

While Tyndall has been a Type II area since 1982, it hasn't always been known as a trophy deer area, according to Shea.

"At first the base was wide open to hunting, and access was unlimited. There were no restrictions on the number of deer being killed, and since access was so wide open, there was no way to know how many deer were being killed and if illegal kills were a problem," Shea said. "Wildlife biologists here before me restricted access, and that, combined with other regulations, resulted in the deer population just booming."

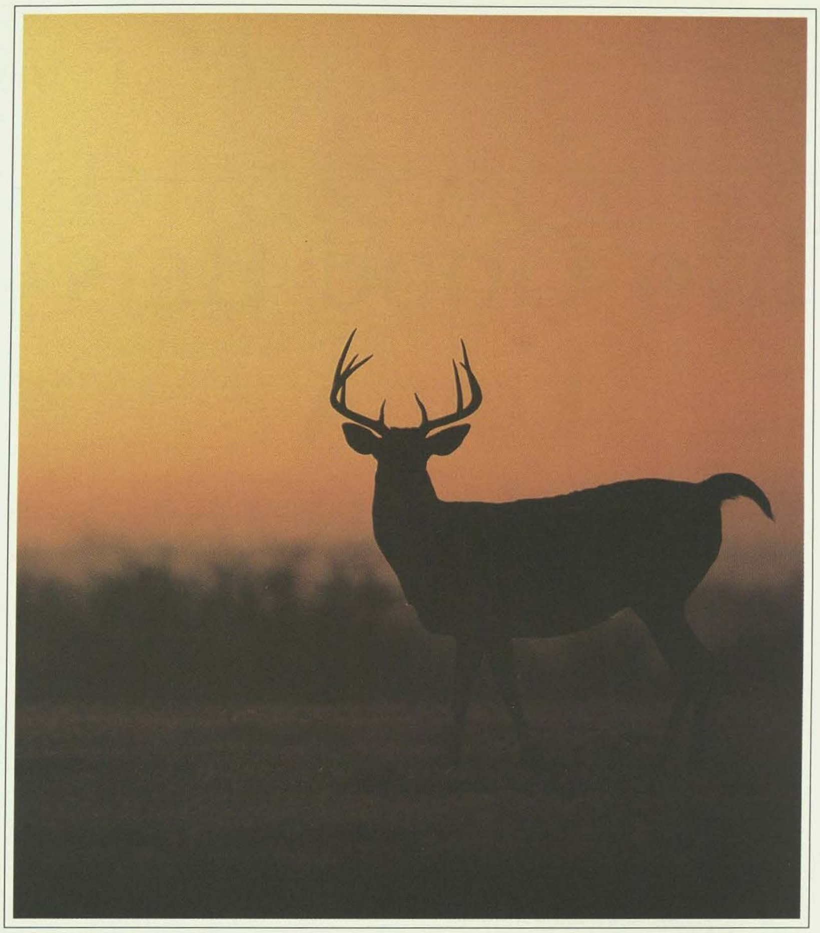
In addition to gating most roads, Shea said, there's an annual buck quota, a limited number of hunters and hunting days allowed and a prohibition on rimfire and centerfire rifles and pistols.

While you might expect some hunters to complain about the centerfire rifle prohibition, Shea said that's not the case.

"Hunters know what our rules are when they come out here and most enjoy deer hunting with either their shotguns or muzzleloaders during the gun season," he said.

Beginning with the 1992-93 season, hunters on the West Unit will experience the new "four point" rule, which means any buck with fewer than four points must be allowed to continue on its way, even during archery season. The purpose of the regulation, Shea said, is to make sure that the vast majority of 1½-year-old bucks, which in Florida tend to have fewer than four points, are allowed to continue growing.

The success of Tyndall's deer management program is seen not only in the number of big bucks it produces but also in the age structure of harvested bucks. In the mid-80s, when hunters had "free reign" more or less, 80 percent of the bucks checked were 1½-year-old deer. Last season, however, only 39 percent of the kill were 1½ years old and 30 percent were at least 3½ years old.


TOM EVANS

While Tyndall's pine woodlands have been logged periodically, the area is studded with live oak hammocks that have gone uncut, providing a source of acorns year after year. A steady diet of acorns, at least part of the year, combined with good browse throughout the area, has resulted in a high deer density, Shea said, averaging more than 40 deer per square mile in some areas.

Shea said most of the bragging-sized bucks are killed during the rut each year. The peak of the rut on Tyndall is the third week of January, which coincides with the latter part of the general gun season. Shea can personally attest to the "power of the rut." His father bagged a rutting 180-pound, eight-point last January with a muzzleloader.

For the last several years, Tyndall's hunting season has abruptly ended when hunters reached a quota of bucks. This season, Shea believes, the implementation of the four-point rule will mean fewer bucks harvested and the season extending through its allotted time.

For season dates, permit cost and information at Tyndall, call the Natural Resources Office at (904) 283-2641.

Moore's Pasture Unit WMA

Having hunted Moore's Pasture for several years, I can personally attest to the area's big deer opportunities.

Just last hunting season while using my muzzleloader I managed to let not one but two nice-racked bucks slip away without getting a shot at either. While telling a co-worker about my poor luck, he told me about driving through the area the previous week and seeing a huge buck with wide beams and high points, standing in a dirt road. He said it, too, scampered away into a dense stand of pines.

While I didn't kill a big buck on the area, I certainly had my chances. And others did too, some making the most of them. Of 92 antlered bucks taken from the 42,810-acre still-hunt area last season, 21 had racks of eight or more points. Since 1987, hunters have killed 142 bucks off the area with eight or more antler points.

To understand how Moore's Pasture produces such quality bucks, it helps to understand the layout of the area. Moore's Pasture is a rectangular-shaped WMA surrounded by four highways. In the interior there are only unimproved, two-rut, dirt roads. The vast majority of this pine flatwoods area in north Bay County is owned by St. Joe Land and Development Company and is intensively managed for pine tree production. Among the creek drainages, numerous ti-ti heads and different-age pine stands, deer have good browse and excellent cover.

In the northwest corner of Moore's Pasture, Pine Log State Forest stands out, due to its picturesque stands of old growth longleaf pine, slash pine and turkey oak ridges. Little timbering is done on this 4,700-acre parcel, owned by the Florida Division of Forestry. One thing DOF does to benefit the deer herd is to burn roughly 2,000 acres late each winter. The burn not only improves the browse available to deer, it also reduces the likelihood of a catastrophic wildfire.

Commission wildlife biologist Fred Robinette said Moore's Pasture has been consistent in yielding big deer due to several factors.

"Timbering operations over much of the area have created odd-age pine stands with a characteristically dense infusion of chest-high gallberry. This dense habitat makes it difficult to hunt bucks, which also hide in the surrounding ti-ti drainage areas," he said. "When you also consider that this is a still-hunt area, you can understand how so many bucks reach 3½ years of age and grow eight-point racks."

Until a few years ago some hunters sat in folding chairs or their vehicles waiting along the narrow roads for a buck to walk out, but that practice was halted as a safety consideration. Roadway hunting is now banned, and wildlife officers rigorously enforce this rule.

There are two check stations on the area, on the east and west sides, to control access. Robinette said all other roads are gated, and the public is not allowed in the area during the off-season. As in many other areas where access is controlled, the deer herd has responded favorably, he said.

While a few trophy bucks are taken throughout the season, the latter part is unarguably the optimum period to hunt, especially during the peak of the rut. Deer hunters understand that bucks dramatically increase their movement at this time, and their vulnerability. Perhaps the best illustration of this point is that last season Moore's Pasture hunters took 47 bucks between Nov. 22 and Jan. 19, but the harvest jumped to 35 bucks for the week of Jan. 20-26. Robinette said the week's kill corresponded to the peak of the rut, with only a handful of deer being taken the rest of the season.

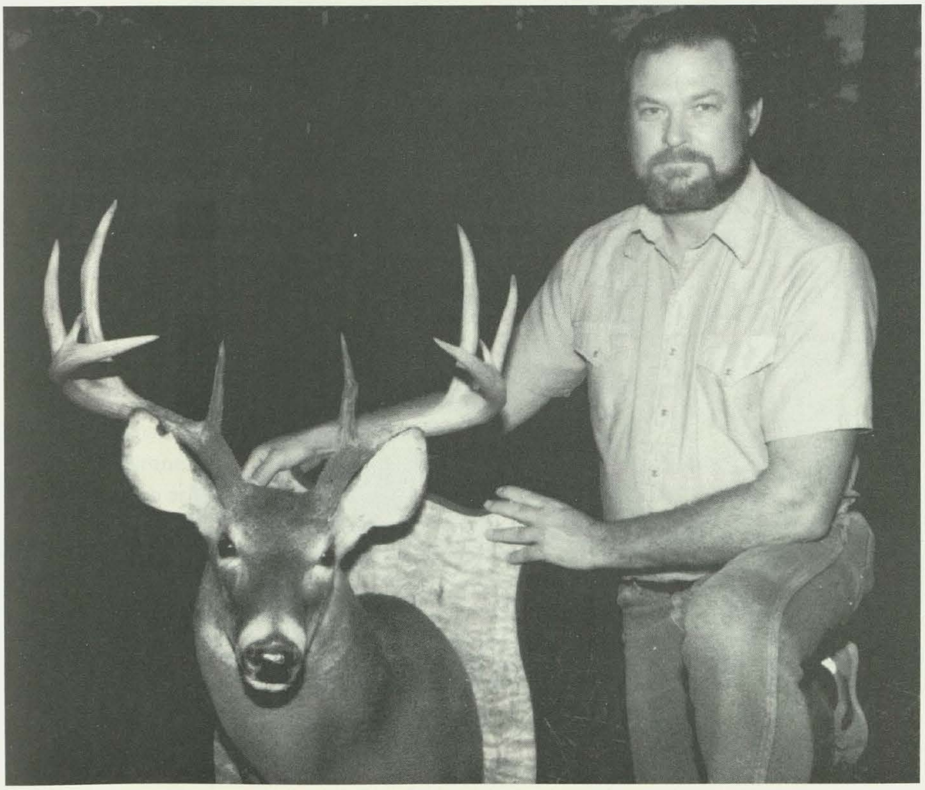
Tree stand hunting is a must on this area. On Pine Log State Forest there are ample trees available to locate your stand, but on the remainder of the area big trees are often at a premium, especially around clearcuts. As a general rule throughout Moore's Pasture, tree stand placement is usually best where deer are traveling to and from the ti-ti creek swamps.

For those who learn the area and are persistent, Moore's Pasture again this season will give up its share of trophy bucks. You can bet I'll be back hoping to claim mine.

A map and regulations summary for Moore's Pasture Unit is available from any regional office of the Commission.

Lt. Stan Kirkland is the public information director in the Commission's Panama City office.

STAN KIRKLAND



Jim Vann of Bay County took this 10-point buck from Moore's Pasture Unit in 1985. It is the largest buck ever harvested there.

Outdoor Library

FLORIDA NATURE PHOTOGRAPHY by William J. Weber is a fine addition to any nature lover's library. Not only does it offer pages of beautiful photographs, but it is a useful photography reference book as well. The book has a short synopsis of several state refuges, national and state parks, preserves and recreation areas. Weber offers helpful suggestions for what, when and where to shoot.

The author includes comprehensive suggestions for purchasing and using equipment and ethical methods of photographing native wildlife. However, the most valuable information is in the "Taking Better Pictures" chapter in which he explains the importance of choosing the best light conditions, something that surprisingly few photographers understand. His informative photo cutlines include camera and lens combinations, settings and film type. Weber's article on how to use a photography blind appeared in the September-October issue of FLORIDA WILDLIFE.

University Press of Florida; November 1992. ISBN 0-8130-1161-2 $39.95; paper 0-8130-1162-0 $19.95; 178 pp.

—Andrea H. Blount

THE SIERRA CLUB GUIDE TO THE NATURAL AREAS OF FLORIDA is a comprehensive guide to the many state, federal and privately owned natural areas comprising what is one of the most extensive recreational land systems in the eastern United States. The book is an excellent gift for anyone interested in outdoor activities. Symbols next to each entry in the four "zones" of the state indicate the activities considered appropriate for that particular area (e.g. backpacking, day hiking, fishing, hunting, horseback riding).

Entries under each natural area heading also identify unique plants, birds, mammals or other features. This is not a picture book, but a pragmatic and extensive guide to Florida's many natural areas. The guide book features particularly good treatment of lands acquired by the state under land purchase programs such as the Conservation and Recreation Lands program.

This title is the seventh in a series of Sierra Club natural area guides. The authors, John and Jane Perry, have organized the materials to be both informative and useful — especially in the field. This softcover book is available for $12 plus postage from Sierra Club Books, 100 Bush Street, 13th floor, San Francisco, CA 94104. ISBN 0-87156-551-X.

—Hugh Boyter, Division of Wildlife

PLANTATION MANAGEMENT ON A SHARECROPPER'S BUDGET by David A. Avant III is written for landowners who want to manage their properties in the tradition of the old, established quail-hunting plantations of north Florida and south Georgia. The author, a licensed real estate broker and landowner, offers personal accounts of cost-effective land management for quail production. Throughout the text, Avant references individuals and institutions recognized in the field of wildlife management. Photographs and drawings by former FLORIDA WILDLIFE art editor Wallace Hughes enhance the text of this paperback book.

This book provides the reader with a basic understanding of the habitat needs of bobwhite quail and how to provide for those needs through land management. The text is easily understood by those not well versed in scientific terminology.

The reader should understand that management applications that worked for Avant may provide varying results in different locations. However, by coupling the author's personal experiences with the reference list provided in the appendix, this book can provide a good foundation for those wishing to encourage quail on their landholdings.

Published by L'Avant Studios, forward by Charley Dickey, illustrations by Wallace Hughes; ISBN 0-914570-12-9, Copyright 1991.

— Scott Sanders, Division of Wildlife

CRANE MUSIC (A Natural History of American Cranes) by Paul A. Johnsgard, offers a concise but thorough history of cranes. It is clear that the author holds these birds in high regard; they have stimulated his scientific curiosity and moved him to write evocative passages describing some of their unique behaviors and vocalizations.

The book concentrates on the natural history of the North American cranes — the sandhill and its subspecies and the whooping crane. Johnsgard neatly summarizes all aspects of their natural history and the intense conservation effort created to help boost their populations.

The author also provides a brief description of the 13 other species of cranes found worldwide. The book is published by Smithsonian Institution Press; ISBN 1-56098-051-6, $19.95, Copyright 1991, edited by Matthew Abbate, designed by Linda McKnight.

— Ann Morrow

By Inspector Kyle W. Hill

Exotics In Florida

Question: Is there a law in Florida that prohibits the release of exotic animals? I've read that Hurricane Andrew resulted in the escape of many exotics in the Miami area. How will this adversely affect the ecology of south Florida?

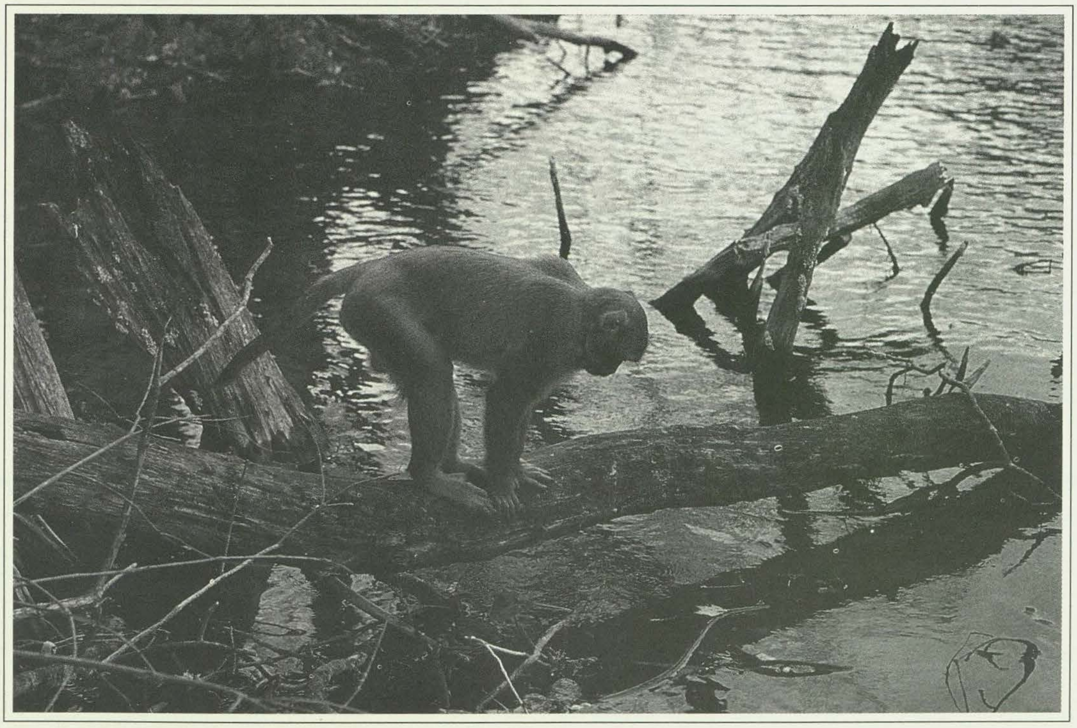
Answer: Biologists use the term "biological pollution" to describe the escape and establishment of exotic wildlife. As a result of the hurricane, dozens of wildlife dealers lost their facilities and their animals. Hundreds of exotic species, including monkeys, parrots, snakes, lizards and amphibians, fled from their wrecked cages and enclosures. Although many of the animals were captured, countless others no doubt will survive and breed in the wilds of Florida.

Many species of wildlife from around the world can adapt to the conditions found in Florida's subtropical climate. Florida already sported a large variety of nonnative animals before the storm. Because of the state's vulnerability to colonization by exotics, Florida law makes it a crime to release such species into the wild intentionally.

Exotics can prey on or compete with our native species. Our resources are under enough environmental stress without having to compete with exotics for food or space. Many exotics also can pose a threat to human safety (monkeys, venomous snakes) and to our agricultural/horticultural interests (parrots, armadillos).

We must maintain control of exotic species if we are to be successful at managing and protecting Florida's resources for ourselves and future generations. If you have exotic pets or know others who do, please make sure their cages are secure at all times. Exotics are often "escape artists" and have a way of taking advantage of any weakness in holding facilities.

Help fight biological pollution by keeping exotics in captivity.



KYLE W. HILL

Thousands of exotic animals escaped when Hurricane Andrew destroyed or damaged their enclosures.

1991-92 Hunting Accidents

By Captain Ed Tyer

During the 1991-92 hunting seasons, there were 33 firearm-related hunting accidents reported to the Game and Fresh Water Fish Commission. This is a drop from 35 such accidents the year before. In addition, fatalities declined from five in 1990-91 to four for last year. We are always glad to see a reduction of accidents and fatalities, but all hunting accidents could be eliminated if hunters would complete the Commission's Hunter Education course and **practice its lessons faithfully.**

At least three of last year's accidents involved unsupervised children under 16. Florida law requires that all children under 16 who use a gun must do so under the supervision of an adult. In addition, hunters born on or after June 1, 1975 are required to have hunter safety training before hunting in Florida.

Day/Date	Time	Age of Shooter	Firearm	Distance	Game Sought	County	Circumstances
Saturday 10/12/91	3:00 p.m.	62	Shotgun	21-50 Yards	Dove	Sumter	Victim covered by shooter swinging on game.
Saturday 10/12/91	4:00 p.m.	11	Shotgun	0-1 Yard	Dove	Polk	Engaging safety.
Saturday 10/26/91	4:30 p.m.	50	Muzzleloader	0-1 Yard	Deer	Polk	Gun fell from rest.
Sunday 10/27/91	1:00 p.m.	49	Muzzleloader	0-1 Yard	Deer	Marion	Shooting muzzleloader with modern powder.
Wednesday 10/30/91	5:48 p.m.	24	Rifle	0-1 Yard	Deer	Martin	Gun fell from rest in vehicle.
Sunday 11/10/91	10:45 a.m.	53	Rifle	0-1 Yard	Deer	Jefferson	Disengaged safety before ready to shoot.
Saturday 11/16/91	5:30 a.m.	58	Shotgun	21-50 Yards	Deer	Alachua	Victim mistaken for game. **FATAL**
Saturday 11/16/91	4:50 p.m.	13	Shotgun	21-50 Yards	Deer	Lafayette	Victim mistaken for game. **FATAL**
Sunday 11/17/91	7:15 a.m.	14	Shotgun	2-5 Yards	Deer	Brevard	Unloading gun, easing hammer down with thumb. **FATAL**
Saturday 11/23/91	10:58 a.m.	17	Shotgun	0-1 Yard	Deer	Collier	Shotgun discharged while propped between knees in moving vehicle.
Saturday 11/23/91	12:05 p.m.	38	Rifle	101+ Yards	Deer	Marion	Victim out of sight of shooter.
Saturday 11/23/91	5:00 p.m.	27	Shotgun	11-20 Yards	Wild Hog	Volusia	Victim mistaken for game.
Tuesday 11/26/91	7:15 a.m.	18	Rifle	51-100 Yards	Deer/Hog	Polk	Victim mistaken for game. **FATAL**

Friday 11/29/91	4:30 p.m.	43	Shotgun	6-20 Yards	Wild Hog	Collier	Victim mistaken for game.
Saturday 11/30/91	6:10 a.m.	57	Rifle	0-1 Yard	Deer	Okaloosa	Loading gun with muzzle facing body.
Saturday 11/30/91	4:30 p.m.	22	Shotgun	0-1 Yard	Deer	Calhoun	Barrel was plugged w/mud.
Sunday 12/15/91	6:55 a.m.	43	Rifle	21-50 Yards	Deer	Citrus	Victim mistaken for game.
Sunday 12/15/91	4:00 p.m.	29	Shotgun	21-50 Yards	Deer	Holmes	Victim out of sight of shooter.
Wednesday 12/18/91	5:45 p.m.	32	Shotgun	0-1 Yard	Raccoon	Baker	Rubbing foot w/barrel of gun.
Saturday 12/21/91	6:50 a.m.	27	Shotgun	51-100 Yards	Deer	Holmes	Victim covered by shooter swinging on game.
Saturday 12/21/91	7:20 a.m.	37	Handgun	0-1 Yard	Deer	Highlands	Hunter holding handgun while firing shotgun. Recoil/sound caused him to fire handgun.
Saturday 12/21/91	1:15 p.m.	30	Shotgun	0-1 Yard	Wild Hog	Palm Beach	Trigger caught on object.
Sunday 12/22/91	9:30 a.m.	26	Shotgun	21-50 Yards	Deer	Marion	Victim in line of fire.
Monday 12/23/91	7:30 a.m.	15	Shotgun	21-50 Yards	Turkey	Taylor	Gun accidentally discharged.
Saturday 12/28/91	7:00 a.m.	73	Rifle	2-5 Yards	Deer	Osceola	Victim lowering loaded gun from tree stand.
Saturday 12/28/91	3:20 p.m.	18	Shotgun	0-1 Yard	Deer	Santa Rosa	Defective gun.
Monday 12/30/91	7:00 a.m.	16	Shotgun	6-20 Yards	Deer	Holmes	Victim mistaken for game.
Monday 12/30/91	6:00 p.m.	28	Rifle	101+ Yards	Turkey	Osceola	Victim mistaken for game.
Wednesday 1/1/92	9:15 a.m.	14	Shotgun	101+ Yards	Deer/ Turkey	Brevard	Victim struck by ricochet.
Wednesday 1/8/92	4:40 p.m.	11	Shotgun	2-5 Yards	Turkey	Wakulla	Gun fired when shooter attempted to open action.
Saturday 1/18/92	9:50 a.m.	23	Shotgun	0-1 Yard	Deer	Volusia	Gun accidentally discharged.
Saturday 2/8/92	3:30 p.m.	13	Rifle	0-1 Yard	Deer	Walton	Shooter uncocking gun when finger slipped.
Saturday 2/8/92	6:10 p.m.	36	Muzzleloader	0-1 Yard	Deer	Gadsden	Gun fell from rest.

Conservation Update

Compiled by Scott Ball

COMMISSION'S QUICK RESPONSE AIDS HUMANS AND WILDLIFE

Hurricane Andrew's powerful winds left a scar upon south Florida that will take years to heal. The storm took its toll not only on human lives and property, but on wildlife and habitat as well. Personnel from the Game and Fresh Water Fish Commission were swift to react — helping south Floridians cope with the effects of the storm, and assessing the impact on the region's ecosystem.

Maintaining public order after a natural disaster is one of many duties for which wildlife officers are trained. Hurricane Andrew gave them ample opportunity to put that training to work. Sixty officers from across the state and 18 volunteer reservists from the Everglades region have been performing a variety of duties in the affected areas. They've assisted local police officers and the military by patrolling streets and neighborhoods to discourage looting, directing traffic and distrbuting food and supplies to those in need.

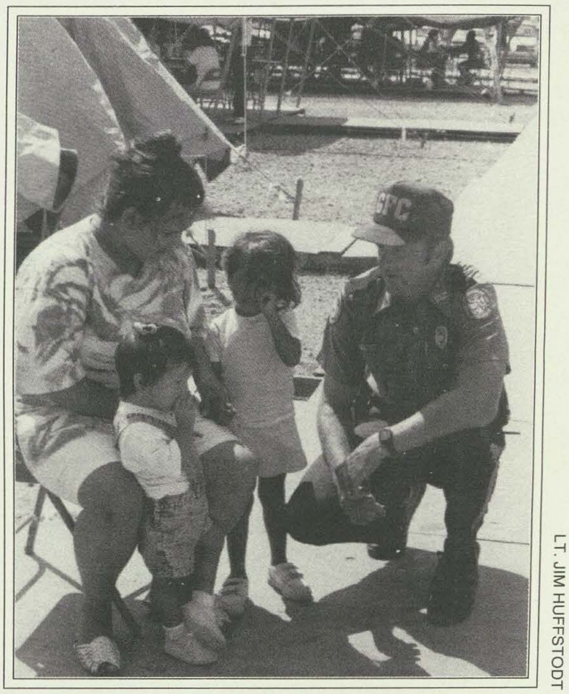
After discovering a previously undetected hard-hit populated area near the Everglades, wildlife officers assisted the 82nd Airborne Division in evacuation and aid efforts. Using Commission aircraft and radio communication equipment, officers helped the military coordinate and direct troop movement and delivery of supplies. They have been on security detail in the tent cities. As south Dade County citizens began cleaning up the debris, wildlife officers began environmental patrols to ensure that people weren't burning rubber, plastic or other toxic materials.

Wildlife inspectors, whose regular duties include monitoring thousands of captive exotic wildlife species, have been especially busy since the hurricane. South Florida is home to 215 businesses dealing in exotic wildlife. The storm destroyed or damaged many of their cages and enclosures, liberating thousands of non-native monkeys, baboons, reptiles, amphibians and birds. Six wildlife inspectors have been helping the businesses recapture their stock.

The establishment of non-native wildlife is a chronic problem in south Florida (see "It's The Law," page 43). Inspectors, wildlife officers, private wildlife-capture businesses and wildlife dealers are diligently working to round up as many of the escaped critters as possible to prevent their becoming established in the area.

South Florida's native wildlife populations appear to have emerged from the storm relatively unscathed. Wildlife biologist Steve Coughlin began evaluating Andrew's effects on area wildlife shortly after the storm passed.

"Prior to the hurricane, water levels were fairly high, so the animals already had moved to the more elevated areas," Coughlin said. "The hurricane didn't leave more than two or three inches of water on the area, so the rainfall didn't seem to have a major effect on the animals."


LT. JIM HUFFSTODT

Also fortunate was the fact that the storm came after wading birds had finished nesting and their young had fledged. In addition, the majority of fawns born five or six months before the hurricane were already self-sufficient.

Not all native wildlife species were so fortunate, however. Habitats critical to three endangered species — the Cape Sable seaside sparrow, Schaus' swallowtail butterfly and Stock Island tree snail — suffered heavy damage. Scientists are taking steps to recover individual butterflies and tree snails for captive breeding and restocking. Seaside sparrows are believed to have survived reasonably well.

Biologists report that while the endangered Florida panther and threatened black bear may have suffered adverse impacts, all radio-collared animals survived the storm unharmed. Scientists will continue to monitor these species as part of ongoing Commission research efforts.

Coughlin said storms and other things that people regard as disasters are actually natural occurrences that resident wildlife have adapted to and usually can tolerate fairly well. He said hurricanes and tropical storms are a natural element of the Everglades ecosystem, and therefore, rarely cause long-term population declines.

But scientists are concerned about how the storm, combined with man's manipulation of the Everglades, will affect the area over the long term. One major concern is the invasion of exotic plant species. Large stands of melaleuca and Brazilian pepper have been encroaching on the Everglades and crowding out native plants for years. It's a sure bet that the storm scattered seeds of these invasive plants into the heart of the Everglades.

South Florida's mangrove swamps appear to have suffered the most severe short-term ecosystem damage from Hurricane Andrew. Mangrove swamps provide important nesting, roosting or foraging habitat for a variety of bird species, including bald eagles and several species of songbirds that nest nowhere else in the United States. Also suffering significant damage are pineland and tropical hammock communities that support one of the largest concentrations of endemic plants in Florida.

Commission scientists will continue to study the effects of Hurricane Andrew on south Florida's wildlife and ecological communities, as well as to develop recovery plans.

COMMISSION PICKS NEW REGIONAL DIRECTORS

Two wildlife biologists have assumed top administrative posts at regional offices of the Commission. Tim Breault is the new director in the Northwest Region office in Panama City, and Greg Holder accepted the position for the South Region in Lakeland.

Holder succeeds Lt. Col. J.O. Brown, who retired after 39 years of service. Brown's career with the Commission began in 1953, when he was hired as a wildlife officer in Broward County. He was appointed regional director in 1962, holding that position until his retirement in August.

Breault fills the post vacated by Bob Ellis, who recently became an assistant director of the Division of Wildlife with the Virginia Department of Game and Inland Fisheries.

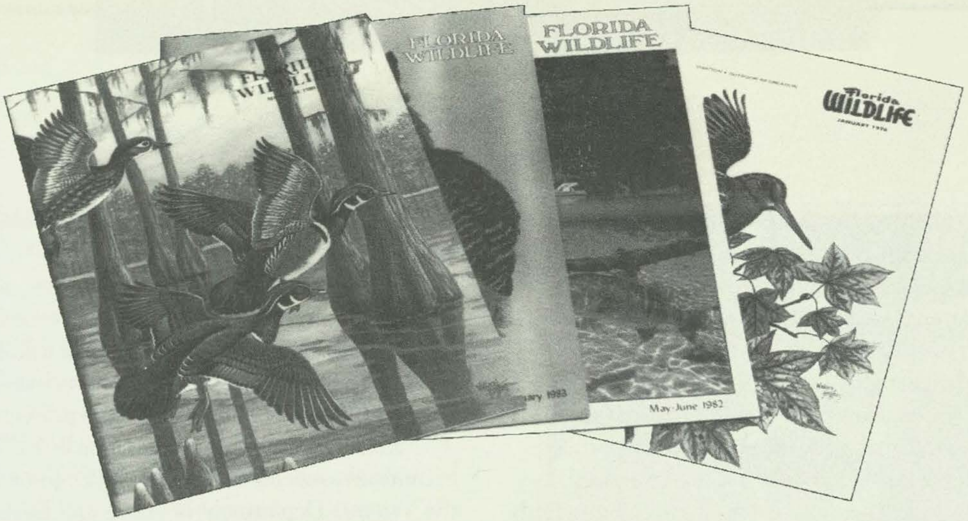
FLORIDA WILDLIFE WINS AWARDS

At its recent conference in Ponte Vedra, the Florida Magazine Association (FMA) presented its prestigious "Florida Award" to FLORIDA WILDLIFE. The award recognizes one publication among all FMA members for rendering outstanding public service to its readers. In fact, the judges chose not to present second or third place awards, even though there were numerous entries.

In addition, art editor Peggy Perkerson's original panther art illustration on the cover of the May-June 1991 issue took a silver award for best illustration in the association journal category.

BILL BURGIN

FLORIDA WILDLIFE staff (l-r) Mary Beth Savage, Andrea H. Blount, Scott Ball, Peggy Perkerson with 1992 FMA awards.



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Floridana

Lord, hold back the waters of Lake Okeechobee,
For Lake Okeechobee's blue waters are cold.
When wild winds are blowin' across Okeechobee,
They're calling and seeking for other poor souls.
Oh, Lake Okeechobee's blue waters are cold.

– "Hold Back the Waters" from *Florida Sand* by Will McLean

Florida's fiercest hurricanes are documented in the scientific record and remembered in song and story. As folk musician Will McLean described the 1928 hurricane's effect on Lake Okeechobee, "nothing could withstand that great tidal wave." Folklore has it that Seminole runners were dispatched to warn the white settlement of the impending *otileelocko* (big storm). The warnings were not heeded, and on Sept. 16, 1928, a Category 5 hurricane hit Lake Okeechobee, deluging the area. It remains America's third worst calamity in loss of life and property.

Insufficient records of itinerant farm workers made it hard to pinpoint the actual number of deaths, although a Red Cross report stated that nearly 2,000 died in unprecedented torrential flooding. Zora Neale Hurston's heart-wrenching account in *Their Eyes Were Watching God* verified the horror and magnitude of this tragedy.

Hurricanes are fierce tropical cyclones born of the ocean's power. Dubbed "willy willies" in Australia, the word "hurricane" comes from the Spanish *huracan*. Scholars believe that the term is possibly a derivation of *Hunraken*, the Mayan god of thunder and lightning. Called typhoons in the western Pacific and China Sea, these violent storms are named *baguio* in the Philippines.

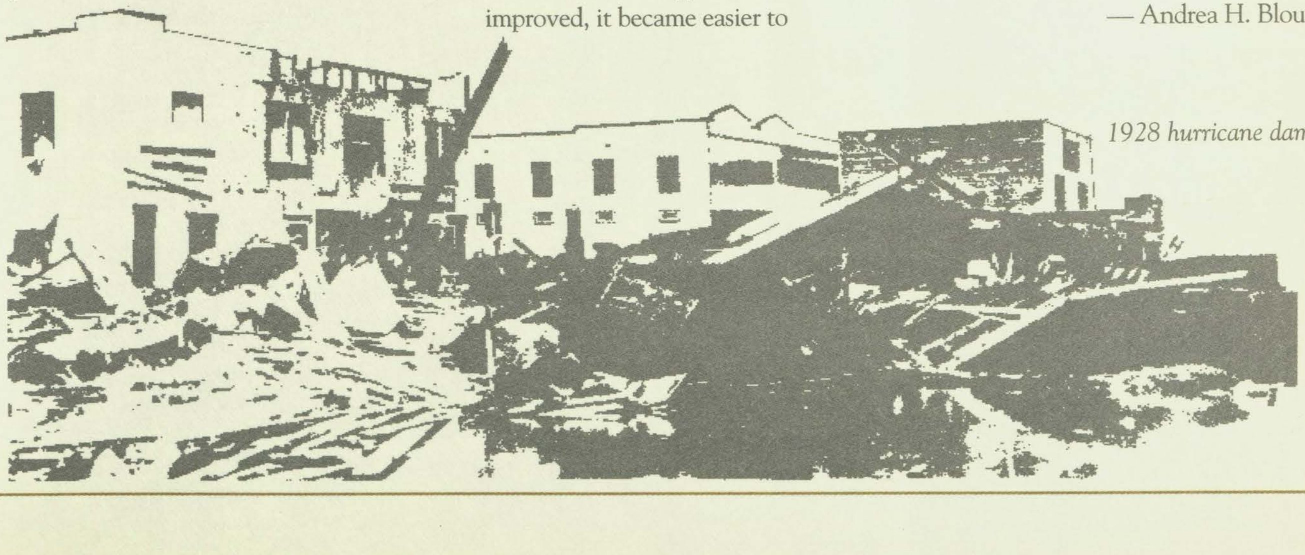
Whatever the name, hurricanes are the greatest storms on earth, and no state has been devastated as often as Florida. One of the earliest storm records in Florida was of the 1819 "Bay of St. Louis Hurricane" that hit Pensacola and careened northward, sweeping turtles and alligators into the streets of Mobile.

Early weather forecasters may have unintentionally called tropical storms "she," although the custom of attributing female names did not become a policy of the Weather Service until 1953. Miscellaneous methods of naming hurricanes have been used over the years, varying from designating each letter of the alphabet to a storm, to using animal names or graphic adjectives. During World War II, hurricanes were named according to a phonetic alphabet (Able, Baker, Charlie...).

As meteorology methods improved, it became easier to distinguish and track tropical cyclones. The first "named" hurricanes to hit Florida were Easy, then King in fall of 1950. Florence and Flossy, both Category 1 storms, were the first "ladies" to blow in. The next major storm to hit Florida was Donna, in 1960. Equal opportunity for using men's names came in the 1970s, although the first "male" storm didn't hit Florida until Hurricane David made landfall in 1979.

Today, Mark Andrew Smith, a modern troubadour, expressed how "Andrew of '92 was more than a gale" in a ballad about the hurricane's wild winds. Smith called upon Florida folk singers to band together as "Florida Folk" to record "The Wild Winds Come" as a fund-raising effort for south Florida hurricane relief. Proceeds from the sale of this tape (available at Spec's Music) will go directly to the Salvation Army. Perhaps these efforts will help diminish the recent horror when "the raging wind took other souls and made some lives unwind."

— Andrea H. Blount



1928 hurricane damage